



COUNCILMAN

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The Inaugural Address

OF

Hon. J. Wesley Kimball,

MAYOR OF NEWTON,

To the City Council,

January 3, 1887.



Newton:

Press of the Newton Graphic,

1887.



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THE MAYOR'S ADDRESS.

*Gentlemen of the Board of Aldermen and of the
Common Council:*

In pursuance of the requirements of our City Charter, we have convened to assent to the oath of the several offices, to which we have been elected, and to enter upon the duties consequent upon our acceptance of public trusts. The faithful execution of these obligations will require a thoughtful consideration of the needs of all the people and of each locality, and also a careful deliberation in determining the policy of the government essential for a wise and economical administration of public affairs and best suited for the advancement and permanent improvement of the city.

It is the duty of the City Council to appropriate in November of each year a reasonable sum of money to meet the expenses of the city for the succeeding year. What amount such reasonable sum is, depends upon the customs and wishes of the people, upon the advantages and conveniences they require, and their willingness and ability to be taxed for them. I am in favor of the lowest rate of taxation, and the most prudent expenditure of money,

compatible with the proper maintenance of the various departments, and a reasonable provision for improvements that are essential to the growth of the city, it being the only way to gain accessions to our population and increase our wealth. Whatever be the sum raised, it should be strictly accounted for and represented by actual improvements.

It is well understood in our city that the tastes, enterprise, and means of the inhabitants require and are satisfied only with the best arrangements for their convenience and comfort. And Newton has won an enviable reputation as a desirable place of residence; a healthful and beautiful city.

It appears to be the general opinion that the City Government is entirely responsible for whatever may be its policy in regard to expenses; to a certain extent this is true, but it is an indisputable fact that the responsibility rests chiefly with the people themselves; they are the principals, the electors; they can and should advise, insist upon, and inaugurate such a policy as they believe ought to prevail.

The general appropriation for the year 1887 was made in conformity to the charter, and a liberal amount has been appropriated to defray all the expenses of the year. Owing to the large demands that will be made, and the tendency to expend money, it will require, however, caution and good management to keep the expenditures within the amount appropriated.

I remind you of the rule that no appropriation

made for a specific purpose shall be used for any other object, unless by vote of the City Council.

The monthly statement of the Auditor has been improved by the addition of a column showing the expense incurred but not paid, which, deducted from unexpended balances, shows the actual standing of the accounts of each department. It is a help in guarding against exceeding the appropriations.

Of the appropriations of the year, one thousand dollars is to be paid to the Cottage Hospital towards its support. It is agreed, however, that patients for whom the city is liable may receive care up to that amount. Though the hospital is a private institution, it is a great public benefit, and the beneficent work it has already accomplished is sufficient to commend the noble and philanthropic enterprise to your generous consideration.

Recently the City Council appropriated a thousand dollars towards an improvement in the Newton Cemetery. This, also, is a private institution but it is one of general interest to the people, and is highly creditable to its originators. The handsome chapel, and conservatory lately completed at a cost of \$25,000, is the munificent gift of Hon. John S. Farlow, as a memorial of the late Dr. Henry J. Bigelow. It is an appropriate and beautiful expression of the respect and tenderness entertained for the dead, and is a lasting and graceful illustration of the liberality of the donor.

The form of government best adapted to cities is

a subject of considerable interest. It is a New England custom to have a board of Aldermen and of Common Council, and for the reason that two branches insure safer legislation. There are many arguments to sustain the statement, but a long experience in municipal government leads me to believe that for smaller cities at least, one Board is equally safe and far preferable. It being the duty of a City Council to determine the amount of money that shall be appropriated, and the purposes for which it may be expended, it is of the greatest importance that the decisions made be based upon a thorough investigation and careful consideration of each item in detail, and this can best be done when all the members are together and participating in and benefiting by the general discussion of all questions. It would secure a greater interest in city affairs, a more careful study of the various subjects presented, and consequently better preparation for the intelligent, prudent, and prompt performance of the city's business. I renew a former recommendation to amend our City Charter, which permits the election of the members of the City Council for one year only, so as to provide for their election for a term of two years, allowing only a portion to retire at the same time. As it takes a considerable part of the first year to become acquainted with the city's business, a longer term would secure the benefit of the knowledge gained, would prevent radical changes in the committees, and would ensure a majority

of the City Council experienced in municipal affairs. It is a sufficient answer to the argument that there would be a risk in electing officials for a term of two years, because some unworthy person might be elected, to say that Newton is particularly fortunate in having so numerous a list of citizens whom it would be safe to trust in any capacity in the management of its affairs. I recommend that a committee be appointed to consider the advisability of a revision of the City Charter to conform to these suggestions.

The provision made by the public statute for voting precincts in Newton is inadequate for the convenience of the citizens. Under the present arrangement, only about two-thirds of the legal voters go to the polls on election day. The long distance necessary to be travelled in some of the wards in order to exercise the right and privilege of voting is a serious objection to many. Our city, with its many villages widely separated from each other, is so unlike other cities in the Commonwealth, and its area is so extensive, that we should be justified in petitioning for special legislation so as to provide for at least four more voting precincts. It is desirable to afford every reasonable opportunity for all citizens to discharge the important and responsible duty of participating in the selection of public officials, and in determining the policy of the government. Ours being a government by the people, the greater the number who take part, the greater the security.

Repeated efforts have been made for several years

by various persons to secure the annexation to Newton of a certain part of Watertown on the south side of Charles river. There are many reasons to justify the endeavor. Many of the people residing in the section alluded to, whose interests are apparently identified with ours, favor and urge the proposition and it would in many respects be advantageous to Newton to control the territory, particularly with reference to public improvements desirable and likely to be made. I recommend that a committee be appointed to consider whether it is desirable for Newton to acquire the territory, and, if so, that the City Council authorize such measures to be taken as may clearly appear to be for the benefit of the city and just to the town of Watertown.

FINANCE.

On account of transactions of the year	
1886 there is out-standing a temporary loan of	\$69,700 00
Bills unpaid	20,000 00
Balance of proceeds of notes issued to pay for additions to the High school and Free library . . .	36,200 00
	<hr/>
	\$125,900 00
	<hr/> <hr/>

Against which there is cash on hand,	\$44,638 22
Uncollected taxes, good	75,000 00
Due the treasury for advances made for extension of water mains, to be charged to water construction ac- count, and to be repaid by the issue of water bonds	9,629 15
	<u>\$129,267 37</u>
And due from miscellaneous sources,	\$10,000 00

There has been advanced from the Treasury, by order of the City Council, cash for the following expenses:—

Repair of damages caused by the freshet in February, 1886	\$10,000 00
Auburndale subway	4,000 00
Miscellaneous expenses	6,000 00
Farlow park	500 00
Armory	400 00
	<u>\$20,900 00</u>

This is to be repaid into the treasury from the next annual assessment and collection of taxes.

The total amount of payment made by the City Treasurer for the year ending Dec. 31, 1886, was \$1,044,043.80, as follows:

Ordinary city expenses	\$329,220 21
Interest	78,716 52
State, county, and national bank tax,	40,696 84
Sinking-fund commissioners	44,852 90
State aid	1,962 95
Water construction	43,196 69
Temporary loans	319,700 00
Education	113,868 02
Funded debt matured	25,150 00
Addition to schoolhouses and new schools	30,179 67
Newton free library extension	12,400 00
Underwood school repairs	4,100 00
	<hr/>
	\$1,044,043 80
	<hr/> <hr/>

Total receipts from all sources during the year ending Dec. 31, 1886 was \$1,033,463.09, as follows:

City taxes	\$443,092 18
Corporation and bank taxes	51,898 53
City securities sold	112,000 00
Interest on bank deposits	503 76
Interest on taxes	1,895 43
Temporary loans	314,400 00
State aid	1,391 50
Sinking-fund commissioners	20,000 00
Water department	61,609 51
Betterments	1,729 57
Read fund	2,419 25
Miscellaneous	22,523 36
	<hr/>
	\$1,033,463 09
	<hr/> <hr/>

The permanent debt of the city, Dec. 31, 1886,
was as follows:—

Town notes, 6½ per cent	\$46,000 00	
Town notes, 6 per cent	147,000 00	
Accrued interest . . .	2,769 21	
	<hr/>	\$195,769 21

These notes all mature by March 10,
1894.

Municipal bonds, 5 per cent	\$34,000 00	
Accrued interest . . .	850 00	
	<hr/>	34,850 00
Water bonds, 6 per cent	\$600,000 00	
Water bonds, 5 per cent	250,000 00	
Water bonds, 4 per cent	181,000 00	
Accrued interest . . .	26,060 00	
	<hr/>	1,057,060 00
Public park bonds, 4 per cent.	\$25,000 00	
Accrued interest . . .	250 00	
	<hr/>	25,250 00
School notes, 4 per cent	\$41,200 00	
Accrued interest . . .	714 13	
	<hr/>	41,914 13
Newton school bonds, 4 per cent	\$44,000 00	
Accrued interest . . .	440 00	
	<hr/>	44,440 00

Uninvested portion of			
Kenrick fund	.	\$2,740 00	
Accrued interest	.	82 20	
		<hr/>	2,822 20
Newton free library			
loan, $3\frac{1}{2}$ per cent	.	23,000 00	
Accrued interest	.	194 54	
		<hr/>	23,194 54
High school loan, $3\frac{1}{2}$			
per cent,	.	45,000 00	
Accrued interest	.	367 50	
		<hr/>	45,367 50
High school land loan			
		10,000 00	
Accrued interest	.	81 67	
		<hr/>	10,081 67
Total amount of funded debt with ac-			
crued interest, Dec. 31, 1886	.	\$1,480,749 25	
The amount of funded debt with ac-			
crued interest Dec. 31, 1885, was	.	1,393,265 11	
		<hr/>	
Increase of city debt	.	\$87,484 14	

SINKING-FUNDS.

The condition of the sinking funds Dec. 31, 1886, was as follows:—

City debt sinking-fund	.	.	.	\$27,096 09
Water debt sinking-fund	.	.	.	194,277 37
Public park loan sinking-fund	.	.	.	12,131 47
School loan sinking-fund	.	.	.	4,473 33
			<hr/>	
Total	.	.	.	\$237,978 26

Amount of sinking-funds, Dec. 31, 1885	204,451 05
Increase in sinking-funds . . .	\$33,527 21
Increase in city debt for 1886 . .	87,484 14
Total increase in funded debt for the year 1886	<u>\$53,956 93</u>

During the year, there has matured and been paid a note of \$20,000, which sum was paid from the city debt sinking-fund.

There will mature a town note, Oct. 3, 1887, of \$20,000 which will be provided for from the city sinking-fund.

There will also mature a school note, Jan. 25, 1887, of \$5,150, to be provided for from the tax levy of 1887.

There will mature Oct. 4, 1887, a Newton Free Library note of \$4,600. School notes Sept. 27th, \$5,000, and Oct. 6th, \$4,500, to be paid from the tax levy of 1887.

In 1885, the real estate was valued at	\$21,134,820 00
Personal estate valued at . . .	7,865,000 00
	<u>\$28,999,820 00</u>
Taxable value of corporate stocks .	\$2,650,600 00
Taxable value of bank stocks . .	962,870 00
Total,	<u>\$32,613,290 00</u>

In 1886 the real estate was valued at	\$21,977,061 00
Personal estate	9,039,869 00
	<u>\$31,016,930 00</u>

Taxable value of corporate stocks	. \$2,811,844 00
Taxable value of bank stocks	. . 965,000 00
Total	. . . . . \$34,793,774 00
Increase of taxable property in 1886	\$2,180,484 00

Value of real and personal property in the city of Newton, which is exempt from taxation under the provisions of the third and seventh divisions of section 5, chap. 11, of the Public Statutes:

Personal	. . . . . \$525,868 00
Real	. . . . . 935,150 00
Total	. . . . . \$1,461,018 00

The rate of tax per \$1,000, in 1883, was as follows:—

City	. . . . . \$14 28
County	. . . . . 0 40
State	. . . . . 0 72
	<hr/>
	\$15 40

The rate of tax per \$1,000, in 1884, was as follows:—

City	. . . . . \$13 00
County	. . . . . 0 40
State	. . . . . 1 00
	<hr/>
	\$14 40

The rate of tax per \$1,000, in 1885, was as follows:—

City	\$12 80	
County	0 30	
State	0 90	
	<hr/>	\$14 00

The rate of tax per \$1,000, in 1886, was as follows:—

City	\$13 35	
County	0 40	
State	0 65	
	<hr/>	\$14 40

In reference to the increase of the city debt, it can be said that it is due entirely to public improvements—the erection of buildings for educational purposes, and the extension of water mains—and represents actual property possessed and used by the city.

No liability of the city can be incurred except by a ye and nay vote of two-thirds of both branches of the City Council. The increase during the past three years was in part for the payment of the Williams and Eliot schoolhouses, built and the liability incurred in 1883, for which ten year school notes were issued in 1884, amounting to \$51,500.

Since then the Rice and Barnard schoolhouses have been built, at an expense of \$44,000, for which ten year school bonds were issued.

There have been laid the past three years 50,135 feet of water main, at a cost of \$67,759, which was paid for by thirty year water bonds.

Additional land for the High school lot was purchased for the sum of \$10,000.

There are in process of construction a building for the High school, costing \$45,000, and an addition to the library building, costing \$23,000, to be paid for by ten year city notes.

Ordinarily the notes in payment for them would have been made during the present year and after the completion of the buildings; they were, however, issued and negotiated in 1886 which makes the increase in that year appear large.

The reason for anticipating the sale of these notes before the buildings were finished, was to take advantage of an opportunity to sell them at the rate of $3\frac{1}{2}$ per cent. interest per annum, which in view of the prevailing high rate for money was deemed a good business transaction. Partial payments have been made on these buildings as they progressed, amounting to \$41,800. The balance of cash is in the treasury. It is a sound financial policy which permits the future to pay a part of the expense of costly and permanent improvements.

During the past three years the total increase in the city debt for all purposes, less the amount paid into the sinking-fund to provide for the payment at maturity, is \$70,970.60; during the same period the taxable property has increased \$4,249,536.00; and it is fair to attribute a part at least of this remarkable increase to the management of a wise and honest city government.

READ FUND.

The balance on hand January 1, 1886, from the income of the Read Fund was \$124.05, and the amount received during the year was \$2,419.25, making the sum available for the year 1886, \$2,543.30

There has been paid for purposes designated by the will of the generous donor as follows:—

For a picnic for children	\$304 39
For scientific lectures	241 35
For the Newton free library	397 00
For poor widows of Newton	510 00
Total	<hr/> \$1,452 74

Leaving a balance on hand of \$1,090.56.

The principal of this fund is \$40,000, bearing interest at the rate of four per cent per annum.

HEALTH.

It is gratifying to state that the general health of the city is good. Newton is fortunate in its healthful location, in the intelligence of the citizens in relation to sanitation, and in having an ample supply of pure water for domestic purposes.

The Board of Health has given great attention and care to the performance of its important and responsible duties. There are many details, however, which must be carefully observed to insure a continuance of the healthful condition of the city

and which require the constant attention of the agent of the Board. He should devote all of his time to the work of the department.

A more hearty co-operation on the part of those building new houses or altering old ones, in reference to the observance of the rules of the Board, would facilitate and insure a more healthful condition of our dwellings.

The contracts for the collection of house offal and for work of the odorless excavator have been well performed.

The cost of removing ashes for the year 1886 was \$3,211.83.

I renew recommendations previously made that vacant land in each village be secured for public play-grounds, and that opportunities for bathing and swimming be provided in the various lakes and ponds of the city; such provision is important for the recreation and health especially of the young, and the necessary arrangements can be made at comparatively small expense.

The appropriation for the Health Department for 1886 was \$4,000. The expenditure was \$2,720.44.

The number of deaths during the year was 275, an increase of only one over 1885. There were but six fatal cases of typhoid and one of scarlet fever, and three fatal cases of diphtheria.

The leading causes of death were: consumption, bronchitis and pneumonia, 53; old age, 17; heart disease, 16; Bright's disease, 10.

SEWERAGE.

On several former occasions I have reminded the City Council of the importance of a thorough discussion of this subject, which is so intimately connected with the health and progress of the city; of the wisdom of its thoughtful and deliberate consideration, and of a careful examination of the various systems now in use in other cities, that hurried conclusions may be avoided, and an effective and economical plan devised for the disposal of the sewage.

Just what system is best adapted to our city is a question of such magnitude, and involves the outlay of so large a sum of money, that it will require the best thought of those most qualified to determine it.

I am of the opinion, however, that any plan for Newton which proposes to utilize the sewage matter should not be favored; there is no profit in it, and any territory within the city used for such purpose would destroy in a great degree the value of adjacent land for habitation. The methods now in use for disposing of the waste matter, while sufficient before the introduction of city water, have become inadequate for the purpose. The daily quantity of water used is so great that the soil is becoming unable to absorb it, and the ground in some of the thickly settled localities is gradually being contaminated with filth.

Whenever a system of public water works is established, it should be accompanied with an appropriate system of sewerage. The benefit to be derived from the use of the water is materially lessened by the lack of the necessary facilities for the disposal of waste flowage.

An act of the legislature, approved May 14th, 1877, authorized the city to construct a sewer on the southerly side of Charles River, through a portion of the Brighton district, to a point in deep water in said river opposite the United States Arsenal in Watertown, for the purpose of discharging the sewage of said city into the river, the work to be constructed so as not to interfere with the navigation of said river or to create a public nuisance.

An act approved May 14th, 1878, gave the city authority to construct a sewer through that part of Watertown which lies on the southerly side of Charles River, to connect with or form a part of the sewer arthorized May 14th, 1877.

The objection made to this plan was the fear of creating a public nuisance, in which event, the city would have expended a large sum of money in constructing sewers, and no outlet would exist for them.

A special committee on sewerage has been appointed each year for several years past. The committee of 1884 gave great attention to the subject, and made an elaborate report, which is on file with the city documents. The committee of 1886 recom-

mended the adoption by the City Council of the following resolution:

"That in the opinion of the City Council, the report made to the legislature by a commission appointed to consider a general system of drainage for the valleys of Mystic, Blackstone and Charles rivers, offers the most satisfactory solution to the problem of disposal of the sewage of Newton, and that the Mayor, City Solicitor and Chairman of the Sewerage Committee be requested to attend the hearings of the Committee on Drainage and Sewerage, at the State House, in behalf of the city, to favor said report, and that our representatives be requested to favor the passage of the legislation recommended in said report."

Under the plan of the Commission, the apportionment of the cost to the city of Newton of the main sewer with which the city may connect its system of sewerage, based upon a population of about 20,000 people, is as follows:—

Of the cost of construction	. . .	\$170,928 00
Interest on same at three per cent per annum	. . . . .	5,127 84
The yearly charge for maintenance	. . . . .	1,314 02

The annual charge for outfall and pumping is ten dollars per million gallons, and change in these conditions would alter the cost accordingly.

The persons designated by the City Council attended and took part at the hearings before the

committee on Sewerage at the State House. From lack of unanimity on the part of the cities and towns bordering on Charles River, for which this system of sewerage is contemplated, action was deferred until the convening of the legislature of 1887.

PUBLIC SCHOOLS.

The large appropriation made for the maintenance of our public schools and the adequate supply of superior schoolhouses may be considered as a practical indication of the belief of our citizens in the advantages and importance of education, in its elevating influence, in the preparation it affords for the attainment of success in life, and in the security it gives to the state in supplying an intelligent and loyal people.

The control of the educational department is vested in a school committee elected by the people for a term of three years. The large sum of money and the important interests involved call for the exercise of sound judgment and ability in the management of this department. The committee has conscientiously and successfully directed its many interests, and their endeavors have received the earnest and efficient co-operation of the superintendent and of the teachers. The superiority of our public schools is generally admitted, and their reputation for excellence is well deserved.

The number of teachers employed during the past year was 101; the number of schoolhouses in use was 21; the assessor's valuation of the buildings and land is \$522,100.00; the total enrolment of pupils was 4,106; the average attendance was 3,238, being an increase of 191 over the previous year. The total enrolment in the several schools was as follows:—

SCHOOL.	WARD.	NUMBER.
High		431
Eliot	1	163
Lincoln	1	51
Clafin	2	201
Adams	2	252
Jackson	2	272
Pierce	3	182
Davis	3	196
Barnard	3	120
Franklin	3	210
Williams	4	332
Hamilton	4	137
Hyde	5	237
Prospect	5	251
Oak Hill	5	30
Mason	6	287
Rice	6	182
Thompsonville	6	44
Bigelow	7	345
Underwood	7	183
Total		4,106

The commodious and attractive new building designed for the use of the High School, and already

partly constructed will furnish long-needed additional room. It is admirably adapted for the purposes for which it is intended.

The arrangements now existing for the practise of calisthenics are very limited. The room used for this purpose is exceedingly inconvenient. The benefit to be derived by the young ladies of the school from physical exercise, especially under the competent direction they receive, is sufficient to warrant and entitle them to the use of a suitable room. The course of study also includes military instruction for the boys. The purpose of the drill is not alone for the military knowledge acquired, but chiefly as a means of physical development. By vote of the School Committee, military drill is to be continued. The accommodations in the building for this purpose are insufficient and therefore it is necessary that the space needed be provided for in some other way.

The evening school has been well attended. The truant officer has rendered satisfactory service, and through his efforts truancy has decreased. During the year three truants were sent to the Lawrence Industrial School for a term of two years each.

I again recommend that the names by which the schoolhouses are known be placed upon the buildings.

The appropriation for the schools for

the year 1886 was	\$112,065 00
There was received from the dog tax	2,081 23
Making a total of	<hr/> \$114,146 23

The expenses were as follows:— .

Superintendent and teachers	\$84,795 60
Secretary	300 00
Janitors	5,906 04
Evening school	632 98
Conveyance of pupils	785 00
Fuel	5,515 79
Incidentals, including text book and furniture	15,452 89
Total	<hr/> \$113,388 30

NEWTON FREE LIBRARY.

This excellent institution, founded for the education and improvement of the people, was at its commencement an individual undertaking, and was maintained by private subscription. In the year 1875, the land, building, and books, of an estimated value of \$45,000, were given to the city by generous and prominent citizens, active always in promoting its best interests. There had previously been expended about \$20,000 for current expenses. Since then the Library has been managed by trustees selected by the city for their qualifications for the trust.

The number of books in the Library is 25,090, being an increase in the year 1886 of 1,779 and an increase of 14,087 volumes since it was acquired by

the city. The circulation has increased from 57,249 volumes in 1875 to 90,213 in 1886. Of the circulation during the past year, 42,137 volumes were delivered at the Library, and 48,076 volumes were distributed by the daily delivery, as follows:—

Newtonville	11,394
Newton Centre	10,482
Auburndale	6,873
Newton Highlands	6,616
West Newton	4,752
Upper Falls	4,471
Lower Falls	2,743
Nonantum	389
Oak Hill, (since Oct. 7,)	356

The total number of names registered for the purpose of taking books from the Library is 5,240.

The appropriation for the Library for the year 1886 was \$8,500. The amount expended was \$8,499.97.

There was also received from the

Spear Fund	\$ 70 00
Jewett Fund	315 00
Read Fund	397 00

Upon the recommendation of the trustees for an enlargement of the building, plans were prepared and approved by the city, and work was begun in August last. It will be ready for occupancy early in the spring. The amount of the contract for the improvements is \$23,000. The addition is equal in

size to the present building, and, when completed, the library will have ample space for the book shelves, and the delivery of the books, a large and well ventilated reading room, a fine general room, and a well lighted and quiet room for reference and study. The usefulness of the library as an auxiliary to the schools is well appreciated by teachers and pupils. By comparison with others it is safe to say that the Newton Free Library will be one of the best arranged and most complete in the state.

The Athenæum at West Newton is also a free library and contains 4,500 volumes and has a circulation of 10,000 volumes. A convenient and well lighted reading room is connected with the library, which is frequented by a large number of readers. The amount contributed by the city towards its maintenance in 1886, was \$400.

HIGHWAY DEPARTMENT.

The importance of this large department, the attention and carefulness required in its management and the expenditures necessary to maintain it, may be inferred from the extent of streets to be cared for.

There are 108 miles of accepted streets to be kept in safe condition and convenient for travel at all seasons of the year. There are also about 29 miles of unaccepted streets which receive partial care.

It would be good policy if arrangements could be made by the city and the abutters to make the

unaccepted streets of proper width and put them in suitable order for acceptance. The land on such streets would be increased in value and made attractive and available for building purposes, and the streets would be cared for by the city. The gain in taxable property thus made would reimburse the city for any outlay it might make.

There are 42 miles of concrete sidewalks. During the past year $\frac{3}{4}$ of a mile was laid and $3\frac{1}{4}$ miles repaired.

The department is remarkably well equipped with all necessary appliances and abundant material for doing work thoroughly and economically.

The appropriation for the highway department, including receipts for work done, for the year 1886, was \$125,872.52.

The amount expended was \$126,192.53.

The expenditures for 1886 in detail were follows:—

Highway general repairs . . .	\$75,905 66
Widening and reconstruction . .	21,220 97
Drains and culverts	14,785 33
Sidewalks and crossings . . .	10,000 00
Gravel land	1,255 57
Land damages	1,525 00
Curbing	1,500 00

Some of the larger items of expenditure charged to highway general repairs are:—

Removing snow from the sidewalks .	\$6,238 73
Cleaning gutters, amounting to . .	6,752 05
Picking stones from the roads . .	1,151 21

The watering of the streets, charged to miscellaneous expenses, has cost \$4,595.54; for water \$1,714.29, for labor \$2,881.25.

The city purchased 13 acres of land on Murray street containing an extensive ledge, to supply stone for the roads; the stone crusher will be removed from Homer street to the ledge. The land owned by the city on Homer street should be graded and put in suitable condition for sale.

The subway recently constructed under the tracks of the Boston and Albany R. R. Co. at Auburndale furnishes a needed improvement, facilitating the travel to the station and intercourse between the residents on either side of the track. It will encourage building upon the vacant land of streets adjoining the station.

The subway and drainage of the streets near the station cost \$9,000; the citizens of Auburndale contributed \$2,000; the Boston & Albany R. R. Co. \$3,000, and the city paid the balance \$4,000.

For the new foot-bridge across Charles River at Lower Falls the town of Wellesley contributed \$230; the city paid \$350.

This thoroughfare across the river ought to be laid out as a public way to be maintained jointly by Wellesley and Newton.

The cost to the city on account of damages by the freshet in February of last year, was \$10,000, but in comparison to the destruction of the property, the injury to individuals, and loss of life in other places,

we have reason to be thankful for our good fortune. The work of repairing the streets and replacing the bridges and culverts washed away has been done in a substantial manner and with a view to guard against a like occurrence.

There has been a large amount of work done in widening and reconstruction in the following named streets:—

Ward, Kenrick, Bellevue, Watertown, Summit, Nahanton, Circuit Avenue, Washington (at lower Falls), Park, Boylston, Newtonville Square, Newtonville Avenue, Waverly Avenue, Eldridge street drain, Cheesecake brook and Mt. Vernon street drain, besides many other less expensive improvements.

Many of the streets are not in the good condition they should be: the necessary repairing and redressing of the streets is to a considerable extent neglected in consequence of the great attention paid to new work.

I earnestly recommend that the streets we have be thoroughly and systematically repaired early in the year, before any new work is begun; it is essential to their economical and satisfactory maintenance.

The item of labor is a large portion of the cost of this department and in the employment of men an unmistakable preference should be given to our own citizens.

The appropriation for the year for this department is a large one, and with skilful management will result in a marked improvement in the condition of our roads.

WATER DEPARTMENT.

The benefit of a public system of water-works to supply the community with pure water, its good effects upon the health of the people, and its influence upon the growth of the place, are obvious to all ; the contrast between such a system and the use of the well with constant danger of contamination of the water and frequent difficulties in drawing it, is very great.

For the purpose of securing an additional water supply, artesian wells were driven in the land adjoining the pumping station, and connected with the pump well. The result has been thus far satisfactory, securing an added supply of about 300,000 gallons daily.

The average daily use of water in 1886 was 690,000 gallons.

298 services were added during the year, making a total of 3432.

The number of hydrants is 471.

There were laid in 1886, 22,354 feet of water main, making a total of 77 16-100 miles.

There has been more main laid and a much larger number of services put in during the past year, than in any previous year since the establishment of the water-works.

The receipts of the Water Department for water rates for 1886 were \$56,075.17, of which the city paid \$12,891.29.

The expenditures for 1886 were for Maintenance, \$12,886.57.

Interest on Water Bonds, \$54,380.00.

Sinking-fund for Water Debt, \$18,000.00.

The amount of Water Bonds issued to date, \$1,-031,000.00.

The deficit in the water rates to pay the cost of maintenance and interest on the bonds in 1886 was \$10,878.70.

The pumping station, reservoir, filter-basin and pipe yard are in excellent condition.

An advantageous contract has been made for 600 tons of water main to be delivered in April.

The Water Board has managed the department with commendable discretion and enterprise.

The sum of \$1500 has been appropriated for putting in a small boiler and heating apparatus at the pumping station, to heat the station and the dwelling house of the engineer and fireman. It is designed as a saving in the amount of fuel consumed, and to heat the premises independent of the boiler used in pumping.

I remind you again of the necessity of a high service supply for Chestnut Hill, Beacon Street Hill, and Institute Hill, which are now insufficiently supplied by the reservoir. Such provision is greatly needed for this extensive and growing district.

I am pleased to state that in accordance with my recommendation, the general use of meters has been provided for by a recent ordinance as follows:

"The Board shall attach a meter to all services supplying other fixtures than faucets, also to fixtures supplying only faucets where more than three are used. The Board shall also furnish meters to all water takers who desire to use them, regardless of the fixtures supplied.

All meters hereafter set shall be furnished, maintained and renewed at the cost of the City; and the Board shall charge an annual rental therefor, provided, nevertheless, that any meter injured through the negligence of a water taker, or by frost, shall be repaired at his expense."

It is desirable to extend the water main from Grove Street to Lower Falls, that locality being now dependent on the Washington Street main, and in the event of a breakage would be without water. The distance is about 1,700 feet, and I am informed that the income for such extension would be equal to 5 per-cent. per annum on the cost.

FIRE DEPARTMENT.

This department was never more thoroughly organized or in better working condition. The strict attention and great care exercised by the Chief is seconded by a corps of capable firemen, and the record of the department for promptness and efficiency is excellent.

The Fire Alarm Telegraph, under the supervision

of the Assistant Chief, has given entire satisfaction. It is a most essential part of any Fire Department and it is important that it should receive regular and intelligent care.

There are about 60 miles of wire, in four circuits, suspended upon 843 poles. The circuits are so extensive that a break in the wire would deprive a large territory of the means of giving an alarm in case of fire. This should be remedied by providing for double the number of circuits.

The stations are in general good repair, and no large outlay will be needed.

There are a few improvements required, such as widening the doors at station No. 1, and new doors at the Truck Station.

There will be need of 1,500 feet of new hose, which will make a total of 10,000 feet in service. Five additional fire alarm boxes have been recommended.

It will be necessary to exchange three horses, which have become unfit for fire service.

The chemical engine purchased last year has given great satisfaction, and in every respect has proved to be a valuable fire extinguishing apparatus. The Chief will recommend that the permanent members of the department be uniformed. I concur with the recommendation.

A petition has been received from citizens of Wards 1 and 2 requesting that a tower striker be placed in Nonantum to enable them to obtain the

fire alarms and the School signals. The request is a reasonable one and should be granted.

The estimated value of the property used by this department is as follows:

Buildings and land	\$86,000 00
Apparatus and furniture	28,000 00
Fire alarm telegraph	24,000 00
Total	<u>\$138,000 00</u>

The number of fire alarms responded to was 63.

The loss resulting from these fires was as follows:

Loss on buildings	\$13,171 07
Insurance paid	12,331 52
Loss on contents	9,001 75
Insurance paid	7,385 25
Total insurance at risk	153,855 00
Loss over insurance paid	2,467 00

The appropriation for this department for the year 1886 was \$26,000.00; the amount expended was \$26,759.42.

POLICE DEPARTMENT.

This department has rendered effective service in the preservation of order and the enforcement of the law.

The ordinance in relation to the Police Department has recently been changed so as to provide for the office of Captain. It now consists of a City Marshal, a Captain, a Sergeant, and seventeen Pa-

trolmen. The large extent of territory to be protected requires additional force, and an appropriation has been made for two more patrolmen.

Improvements have been made in some of the stations and all of them are now in safe condition. The number of arrests made in the year 1886 was 528; the number of tramps who applied for lodging and food was 1,199.

An exceedingly interesting and useful course of lectures on emergency and hygiene has been delivered by Dr. R. P. Loring to the officers of the department. The information gained will be of great service to the patrolmen in rendering immediate and efficient aid to the sick or injured persons who may require their assistance.

The official courtesy extended by His Honor, Judge Park, standing Justice of the Police Court, and his manifest interest in the efficiency of the department and the welfare of the officers are gratefully acknowledged.

It shall be my endeavor, as in the past, faithfully to execute the laws of the Commonwealth and the ordinances of the city.

The appropriation for this department for the year 1886 was \$21,594.00; the amount expended, \$21,591.46.

STREET LIGHTS.

During the past year, 56 street lamps have been added, making a total of 1,298. Of these, 783 are

lighted with gas and 515 with oil. The gas lamps cost \$17.75 each per year; the oil lamps cost \$10.50 per year. The appropriation for this department for the year 1886 was \$21,750.00; the amount expended was \$22,113.97. The contract with the Newton & Watertown Gas Light Co. expires May 14, 1887. It provides that lights shall be furnished from sunset until midnight twenty nights in each month, to wit:—the twenty nights least lighted by the moon, and upon cloudy and stormy nights whether there is moonlight or not, as the City Marshal shall determine. Either the lamps should be lighted every night regardless of the moon or greater care taken that they are lighted whenever needed. The terms of the contract require that the lamps be extinguished at 12 o'clock at night. They should be kept burning much later. The wishes of our citizens for well-lighted streets and the safety it gives to travellers will approve of keeping the lights burning from sunset to sunrise. The increase of cost ought not to be large, as the only additional expense would be for the gas consumed, and with the modern facilities, appliances, and moderate price of material for its manufacture, it can be profitably furnished at a low figure.

During the year the Newton Electric Light and Power Company was licensed to do business in Newton, and was given a writing granting and designating the streets and locations for poles and wires. The company has put in its plant and I

understand that it is ready to make contracts. From inquiry and observation it will be found that electric lights are in general use, and that many of the towns and cities in this vicinity are lighting some portion of their streets with electricity, and with satisfactory results. It would be an advantage if the various squares and some of the principal streets in our city were lighted by this system. I recommend that the Council Chambers at City Hall be lighted by the incandescent system of electric lights. It would prove an agreeable light, the purity of the air would not be impaired and the excessive and troublesome heat arising from the large number of gas burners avoided. There is no occasion for and ought not to be any antagonism between the two companies now furnishing artificial light in this city. The franchises which they have are valuable, and it is hoped that the business of selling light may prove profitable to both, and at the same time the public may be benefited by having a better light than formerly and at considerable less cost.

PUBLIC PROPERTY.

The condition of the public buildings has been much improved during the past year and generally they are in good order. There are, however, several of the schoolhouses which will need repainting and some other repairs.

Improved sanitary arrangements are much needed at the Bigelow schoolhouse, and new heating apparatus is required at the enginehouse at Newton Centre.

During the year 1886 the interior and exterior of the Underwood schoolhouse were repainted and the sanitary arrangements, ventilation, and heating thoroughly reconstructed, at an expense of \$4,100. The hose-house in Ward 5 was repaired, and an addition made which effectually corrects the defective drainage which has existed for several years, and provides the needed room for the highway horses. The cost of these improvements was \$1,800.

The Hyde and Jackson schoolhouses have been improved so as to provide better light in the school-rooms, at an expense of \$900.

The Pierce, Mason, and Adams schoolhouses have been repainted.

The area of the High School lot has been increased by the purchase of about 30,000 feet of land, making it now a very fine and ample school lot.

The first section of the new High School building, now in process of construction, will be a handsome and convenient building, costing \$45,000. It will be ready for occupancy at the beginning of the next school year.

The addition being made to the Public Library will be completed by March 1st, and the old part will be materially improved by the introduction of steam heating and better ventilation; the cost of the improvements is \$23,000.

In the engine and police stations many sanitary and other improvements long needed for the comfort of the occupants have been completed.

If, in the present year, the same care and attention are paid to the buildings needing renovation, that have been given the past year, it is safe to say that our public buildings will be in far more satisfactory condition than for years previous.

The appropriation for this department, exclusive of new buildings, for the year 1886 was \$14,000.00; the amount expended was \$14,216.41.

POOR DEPARTMENT.

The duty of caring for those whose destitution requires aid from the city calls for the exercise of good judgment and careful consideration. These duties have been performed faithfully and well by the Board of Overseers and the Almoner.

The Almshouse is in good condition, well arranged and heated by steam; the rooms are neatly kept; and plenty of wholesome food is provided for the occupants.

The number of inmates at present is 21, a less number than usual, most of them being feeble and advanced in years.

There has been during the past year a small decrease in the demands upon the department, which is a good indication of increased opportunity for employment.

The appropriation for maintaining the Almshouse and assisting the outside poor for the year 1886 was \$12,000.00; the amount expended was \$11,038.58.

There was paid into the treasury the sum of \$1,922.20, being the proceeds of sales from the farm.

The City Farm, being located near the railroad station, at Waban, a locality so available and attractive for building purposes, is too valuable to be retained for its present use.

A much smaller tract of land with the necessary buildings in some inexpensive location would serve equally well. The city would benefit not only by the cash received from the sale of the property over the cost of a new plant, but would also be benefited by its removal, from the more rapid development of the district, and the consequent increase of taxable property.

ASSESSORS' DEPARTMENT.

Recent legislation upon the duties of Assessors. Chap. 298, Acts of 1884:

SECT. 19 Provides that the assessors of taxes of each city shall, on or before the fifteenth day of July in each year, cause street lists of the several voting precincts in such city to be compiled and printed in pamphlet form for public distribution. Said compilation shall be by precincts separately, not exceeding fifty copies for each, arranged so as to show under the number of the house, or if there is no number,

then under such other definite description of the location of the dwelling place as will enable it to be readily ascertained, the names of all persons resident in each dwelling, and assessed for poll taxes. The said assessors shall send such number of copies thereof as may be required by the Board of Registrars of voters to the clerk of said Board.

Chapter 106, Acts of 1885, requires the assessors to enumerate and return the number of neat cattle and swine.

Chapter 271, Acts of 1885, An Act to regulate the Assessment and Registration of Voters provides that:

SECT. 1. In the months of May and June of each year, the assessors or assistant assessors of taxes shall visit each dwelling house or building in their respective cities or towns, and make a true list of all male persons twenty years of age and upwards liable to be assessed for a poll tax, returned to them by the owners or occupants of said dwelling houses or buildings as residing therein, together with their occupation and age, as near as may be, and residence on the first day of May of the preceding year; and shall also furnish the original list or a certified copy thereof to the registrars of voters of their respective cities and towns from time to time, before the fifteenth day of July ensuing; and all assessors and collectors of taxes shall furnish any information in their possession necessary to aid the registrars and assistant registrars in the discharge of their respective duties.

Chapter 68, Acts of 1886, calls for further duties relative to the assessment of women.

It is plain that these new requirements have largely increased the work of the assessors, which cannot be actively entered upon till May 1st. Moreover, the street lists, involving lengthy details, must be ready for the printers the latter part of June, to enable compliance with the law, which requires their publication by the fifteenth of July.

The lists for the registrars of voters to be furnished by the fifteenth of July require a large amount of clerical work within a given time.

It is evident that some changes are necessary in the usual methods of the department to meet the requirements of law, as the street lists and the lists for the registrars of voters were not furnished last year till October. To remedy this, the assistant assessors could be called upon for more service than now rendered. Practically, there is no limit to their per diem employment, but care should be taken that persons are elected as assistant assessors who can be relied upon to devote such time as may be necessary to the work.

I bespeak for the gentlemen who now constitute the Board that confidence which is justly due them, as the duties imposed upon them are of grave importance and affect so directly the revenues of the city.

The term of service in the Assessors' department, rendered to the town and city of Newton by the

venerable Chairman of the Board, Mr. Isaac Hagar, has reached the remarkable period of forty years.

REGISTRATION.

The number of persons liable to poll tax returned by the assessors is 5,161. Of this number there were registered up to the time of the city election, Dec. 7, 1886, 3,319; a net gain of 137 over last year, but after making allowance for persons ineligible, it is evident that a large number neglect the high duty of suffrage.

Convenient opportunity is afforded by the Board of Registrars for entry of names on the lists, by holding meetings for registration in the several sections of the city and frequently at the City Hall. The important and oftentimes delicate duties of this Board have been performed with almost absolute correctness and with little friction. The cost of the registration department is about \$700.

CLAFLIN GUARD.

This company during the past year has added to its reputation for discipline and effective service.

At the annual encampment, the rolls contained the names of three commissioned officers and fifty-nine enlisted men. Of this number, eighty per cent. performed camp duty. More than half the company have been present at the weekly meetings for instruction and drill.

At the State rifle match, nearly every company in the Commonwealth entered for competition. The State individual prize, the regimental trophy, and the regimental individual prize were won by this command.

The captain offered his resignation after return from camp, but so valuable are his services that upon recommendation of his regimental and brigade commanders, the Governor was constrained to disapprove the application, which was returned with flattering endorsement.

Such a record of the company commends this organization as worthy of our fostering care and support.

The cost to the city for the year 1886, was \$923.38.

The receipts from the rental of Armory Hall last year were \$245.77. The amount received from the State was \$400.00.

CONCLUSION.

Permit me on this occasion to present my grateful acknowledgements to my fellow-citizens for their repeated testimony of regard. Having been elected Mayor for the fourth term, it is not, I trust, inappropriate to publicly express my hearty appreciation of the cordial support I have received, and my regard for the honor thus conferred upon me.

From the review of the various departments, an impression may be gained of the magnitude and di-

versity of interests to be provided for, and consequently of the indispensable need of a corresponding diligence and intelligent care.

It should be our determination to execute these important trusts with such earnestness and fidelity as will insure an economical, efficient and progressive administration of public affairs and the advancement of the highest welfare of all our citizens.

City of Newton.

AUDITOR'S ANNUAL REPORT

OF THE

FINANCES OF THE CITY OF NEWTON

For the Year ending December 31, 1887.

No. CCIX.



BOSTON :
RAND AVERY COMPANY, PRINTERS.
1888.

CONTENTS.

	PAGE
CITY GOVERNMENT, 1887	7
DUTIES OF THE AUDITOR OF ACCOUNTS	21
AUDITOR'S REPORT	22
CITY TREASURER'S ACCOUNT	25
REPORT OF COMMITTEE ON FINANCE	29-30
LIABILITIES	31-32
ASSETS AND RECAPITULATION	33-37
RECEIPTS	38-39
EXPENSES	40-42
TABLE SHOWING APPROPRIATIONS, TRANSFERS, MAYOR'S WARRANTS, ETC.	43-45
TABLE SHOWING PERMANENT DEBT	46
STATEMENT OF KENRICK FUND	47
TAXES AND TAXABLE VALUATION	47
LEDGER BALANCES	48-49
REPORT OF COMMISSIONERS OF SINKING FUNDS	50-52
REPORT OF THE TRUSTEES OF THE READ FUND	53
DETAILED STATEMENT OF RECEIPTS AND EXPENDITURES	53-177

RECEIPTS.

Almshouse	53
Armory	53
Betterments	54
City Hall	54
Collector's Fees	54
Corporation Tax	54
Dog Tax	54
Druggists' License Fees	54
Fire Department	54
Funded Debt — Water Bonds	55
Highway Department	55
Interest on Farlow Park Betterments	55
Interest on Deposits	55

	PAGE
Interest on Taxes	55
Interest on City Loans	56
Interest on Water Bonds	56
Indigent Soldiers and Sailors	56
Kenrick Fund Income	56
Miscellaneous	57
National Bank Tax	57
Newton Free Library	57
Police Department	57
Poor out of Almshouse	58
Peddlers' Licenses	59
Public Property	59
Premium on Tax Sale	59
Premium on Water Bonds	59
Record and Other Fees	59
Read Fund Income	60
School Incidentals	60
Ships engaged in Foreign Trade	60
Sinking Fund Commissioners	60
Sidewalks and Curbing	60
State Aid	60
Taxes, 1883 to 1888	60
Tuition for Non-Resident Pupils	62
Temporary Loans	62
Water Meters and Service-Pipes	63
Water-Rates	64
Water-Rates by Meters	64
Water Department	64
Water Construction	170
Water Rebate	64

EXPENDITURES.

Almshouse	64
Armory Expenses	67
Addition to Newton Free Library Building	67
Books, Stationery, and Printing	68
Board of Health	69
Burial Grounds	71
City Engineer's Department	71
City Hall	73
Fire Department	74
Funded Debt, Town Note	89

	PAGE
Funded Debt, Schoolhouse Note	89
Funded Debt, School Note for Land	89
Funded Debt, High School Building	89
Funded Debt, Newton Free Library Building	89
Highways, Curbing	89
Highways, Drains and Culverts	90
Highways, General Repairs	92
Highways, Gravel Land	101
Highways, Land Damages	102
Highways, Removal of Ashes	102
Highways, Sidewalks and Street Crossings	103
Highways, Widening, Reconstruction, and Improvements,	104
Interest on City Loans, Permanent	105
Interest on City Loans, Temporary	106
Interest on Water Bonds	107
Indigent Soldiers and Sailors	108
Memorial Day	108
Miscellaneous Expenses	108
Newton Free Library	120
Newton High School Building (enlargement)	124
Newton Cottage Hospital	125
Parks and Squares	125
Police Department	126
Poor out of Almshouse	130
Public Property	136
Read Fund Income	141
Salaries	142
Schools, Conveyance of Pupils	143
Schools, Evening	143
Schools, General Appropriation	146
School Incidentals	155
Sinking Fund, City Debt	160
Sinking Fund, School Loan	160
Sinking Fund, Water Bonds	160
Sinking Fund, Public Park Loan	161
State Aid	161
Street Light Department	162
Suspense Account	163
Taxes 1887, County	164
Taxes 1887, Corporation	164
Taxes 1887, National Bank	164
Taxes 1887, State	164

	PAGE
Temporary Loans — 1887	164
Thompsonville Schoolhouse, Land for	165
Water Construction	166
Water Maintenance	170
Water Meters and Service Pipe	175
Water Rebate	176
Watering Streets, and Water for Same	177
Water, Use of Hydrants	177
SCHEDULE OF CITY PROPERTY, REAL AND PERSONAL . .	178-184
TABLE SHOWING THE NUMBER OF POLLS, REAL AND PERSONAL ESTATE, ETC.	185
TABLE SHOWING AMOUNT PAID FOR SUPPORT OF POOR OUT OF ALMSHOUSE, FROM 1851 TO 1887 INCLUSIVE . .	186
SALARIES OF CITY OFFICERS, 1887	186-190
CITY GOVERNMENT, 1888	191
CITY CLERK'S STATEMENT OF BIRTHS, MARRIAGES AND DEATHS, FEES, DOGS	199

OFFICERS
OF THE
NEWTON CITY GOVERNMENT,
1887.

MAYOR.
J. WESLEY KIMBALL.

BOARD OF ALDERMEN.
GEORGE PETTEE, *President*.

WARD ONE.
J. EDWARD HOLLIS.

WARD TWO.
BENJAMIN S. GRANT.

WARD THREE.
JAMES H. NICKERSON.

WARD FOUR.
FREDERICK JOHNSON.

WARD FIVE.
GEORGE PETTEE.

WARD SIX.
JOHN WARD.

WARD SEVEN.
SETH K. HARWOOD.

CLERK OF BOARD OF ALDERMEN.
ISAAC F. KINGSBURY.

COMMON COUNCIL.
LEWIS E. COFFIN, *President*.

WARD ONE.
LEWIS E. COFFIN.
HERBERT H. POWELL.

WARD TWO.
N. HENRY CHADWICK.
ELLIS W. REDPATH.

WARD THREE.
GEORGE D. DIX.
ANDREW J. FISKE.

WARD FOUR.
THEODORE W. GORE.
EVERETT E. MOODY.

WARD FIVE.

EDMUND G. POND.
EDWARD M. BILLINGS.

WARD SIX.

HEMAN M. BURR.
HENRY H. READ.

WARD SEVEN.

J. CHARLES KENNEDY. WARREN P. TYLER.

CLERK OF COMMON COUNCIL.

ALBERT S. GLOVER.

CITY CLERK.

ISAAC F. KINGSBURY.

CITY TREASURER, AND COLLECTOR OF TAXES.

JOHN A. KENRICK.

DEPUTY COLLECTOR.

MOSES CLARK, Jun.

CITY AUDITOR.

BENJAMIN F. OTIS.

CITY SOLICITOR.

WINFIELD S. SLOCUM.

CITY ENGINEER.

ALBERT F. NOYES.

SUPERINTENDENT OF STREETS.

WILLIAM E. FULLER.

WATER REGISTRAR.

ALBERT S. GLOVER.

SUPERINTENDENT OF WATER WORKS.

H. N. HYDE, Jun.

AGENT OF THE BOARD OF HEALTH.

NATHAN MOSMAN.

CITY MESSENGER.

JOSEPH D. WELLINGTON.

ASSESSORS' DEPARTMENT.

Assessors.

ISAAC HAGAR, Chairman	.	.	.	Term expires January, 1889
HOWARD B. COFFIN, Secretary	.	.	.	" " " 1890
SAMUEL M. JACKSON	.	.	.	" " " 1888

Assistant Assessors (elected annually).

Ward 1. — EDWIN O. CHILDS.	Ward 4. — CHARLES A. MINER.
Ward 2. — A. A. SAVAGE.	Ward 5. — WILLIAM E. CLARKE.
Ward 3. — GEORGE E. ALLEN.	Ward 6. — GEORGE WARREN.
Ward 7. — JOHN WARNER.	

SCHOOL COMMITTEE.

HON. J. WESLEY KIMBALL, Mayor, *Chairman ex-officio*.
 LEWIS E. COFFIN, President Common Council, *ex-officio*.
 FISHER AMES, *Chairman*.
 THOMAS EMERSON, *Secretary*.
 THOMAS EMERSON, *Superintendent*.

Elective Members.

Present Term of Office.

Ward 1. — EDMUND W. CONVERSE	.	.	Expires January, 1889
CHARLES H. STONE	.	.	" " 1889
Ward 2. — JOHN W. DICKINSON	.	.	" " 1889
A. AMELIA SMEAD	.	.	" " 1889
Ward 3. — GEORGE A. WALTON	.	.	" " 1888
FISHER AMES	.	.	" " 1888
Ward 4. — WILLIAM S. SMITH	.	.	" " 1888
ISAAC HAGAR	.	.	" " 1888
Ward 5. — WALTER C. FROST	.	.	" " 1890
ALBERT B. PUTNEY	.	.	" " 1890
Ward 6. — CHARLES C. BARTON	.	.	" " 1890
WILLIAM D. PHILBRICK	.	.	" " 1890
Ward 7. — GEORGE W. SHINN	.	.	" " 1890
ALONZO S. WEED	.	.	" " 1888

STANDING COMMITTEES.

HIGH SCHOOL.

FISHER AMES.	WILLIAM S. SMITH.
EDMUND W. CONVERSE.	ALBERT B. PUTNEY.
JOHN W. DICKINSON.	CHARLES C. BARTON.
GEORGE W. SHINN, and Mayor <i>ex-officio</i> .	

SALARIES.

EDMUND W. CONVERSE. JOHN W. DICKINSON.
LEWIS E. COFFIN.

SCHOOLHOUSES.

CHARLES H. STONE. JOHN W. DICKINSON.
FISHER AMES.

ACCOUNTS.

ISAAC HAGAR. FISHER AMES.
GEORGE A. WALTON.

SUPPLIES.

ALONZO S. WEED. WILLIAM D. PHILBRICK.
EDMUND W. CONVERSE.

WATER BOARD.

At Large.

EDWARD W. CATE, *President*.
FRANCIS A. DEWSON. CHARLES FRED CREHORE.

From the Board of Aldermen.

GEORGE PETTEE.

From the Common Council.

GEORGE D. DIX.
ALBERT S. GLOVER, *Clerk*.

POOR DEPARTMENT.

Board of Overseers.

THE MAYOR, *ex-officio*, *Chairman*.

Ward 1. — EDWIN O. CHILDS. Ward 4. — NATHAN MOSMAN.
Ward 2. — EDWARD S. COLTON. Ward 5. — HOSEA C. HOYT.
Ward 3. — GEORGE E. ALLEN. Ward 6. — GEORGE WARREN.
Ward 7. — JOHN WARNER.

NATHAN MOSMAN, *City Almoner*.
NATHAN MOSMAN, *Clerk of Board*.
NATHANIEL D. MOODY, *Warden of Almshouse*.
MRS. ELIZA A. MOODY, *Matron*.

BOARD OF HEALTH.

THE MAYOR, *ex-officio*.

From the Board of Aldermen.

BENJAMIN S. GRANT, *President*.

From the Common Council.

HEMAN M. BURR.

At Large.

J. FRANKLIN FULLER.

JESSE F. FRISBIE.

OTIS PETTEE.

Agent of Board.

NATHAN MOSMAN.

Clerk.

ISAAC F. KINGSBURY.

Agent for Inspection of Plumbing.

ALBERT F. NOYES.

FIRE DEPARTMENT.

HENRY L. BIXBY, *Chief of Department*.

WALTER B. RANDLETT,

Assistant Chief of Department, and Fire Alarm Telegraph Operator.

TRUSTEES OF PUBLIC LIBRARY.

At Large.

JOHN S. FARLOW, *President*.

B. K. PIERCE, *Superintendent*.

WILLIAM CLAFLIN.

A. LAWRENCE EDMANDS.

JULIUS L. CLARKE.

From the Board of Aldermen.

GEORGE PETTEE.

From the Common Council.

ELLIS W. REDPATH.

HANNAH P. JAMES, *Librarian to July 1st.*

BRADFORD K. PIERCE, *Librarian from July 1st.*

Sinking Fund Commissioners, and Trustees of the Read Fund.

GEORGE S. BULLENS, *Chairman.*

ALDEN SPEARE.

GEORGE C. LORD.

BENJAMIN F. OTIS, *Secretary.*

Registrars of Voters.

GEORGE E. BRIDGES, *Chairman.*ISAAC F. KINGSBURY, *Clerk.*

GEORGE H. BOURNE.

RICHARD T. SULLIVAN.

CIVIL SERVICE EXAMINERS.

LUCIUS G. PRATT, *Chairman.*HENRY C. HAYDEN, *Secretary.*

ARTHUR W. POPE.

POLICE DEPARTMENT.

DANIEL M. HAMMOND, *City Marshal.*CHARLES F. RICHARDSON, *Captain of Police.*CHARLES E. DAVIS, *Sergeant of Police.*

Police Officers.

JAMES D. HENTHORN.

CHARLES P. HEUSTIS.

WILLIAM C. EMERSON.

ROBERT S. HARRISON.

NOAH F. BOSWORTH.

FRANK B. FLETCHER.

GEORGE E. F. BAKER.

JOHN PURCILL.

CHARLES O. DAVIS.

RUFUS H. MOULTON.

EDSON C. HOLMES.

W. G. BOSWORTH.

JOHN RYAN.

AMBROSE M. FULLER.

JOHN W. CONROY, Jun.

THOMAS C. CLAY.

CHARLES T. BARTLETT.

ELECTION OFFICERS 1887.

WARD ONE.

Warden	R. ORLANDO EVANS.
Deputy Warden	EDWIN A. SMALLWOOD.
Clerk	SETH C. STEVENS.
Deputy Clerk	GEORGE R. ASTON.
Inspector	FRED H. STONE.
Inspector	EDWIN O. CHILDS.
Deputy Inspector	ALBERT P. BUGBEE.
Deputy Inspector	CHARLES H. STUART.

WARD TWO.

Warden	HENRY P. DEARBORN.
Deputy Warden	JOHN F. PAYNE.
Clerk	WILLARD S. HIGGINS.
Deputy Clerk	ALFRED B. TAINTER.
Inspector	LAWRENCE H. CRANITCH.
Inspector	JAMES D. BILLINGS.
Deputy Inspector	J. H. WILLIAMS.
Deputy Inspector	GEORGE K. LITTLFIELD.

WARD THREE.

Warden	HARVEY C. WOOD.
Deputy Warden	FRANK E. HUNTER.
Clerk	EDWARD S. MERCHANT.
Deputy Clerk	MILO F. HARGEDON.
Inspector	ARTHUR R. COE.
Inspector	CHARLES F. TUTTLE.
Deputy Inspector	EDWARD L. LEMON.
Deputy Inspector	F. H. HUMPHREY.

WARD FOUR.

Warden	GEORGE E. JOHNSON.
Deputy Warden	BERNARD EARLY.
Clerk	HENRY H. MATHER.
Deputy Clerk	G. LYMAN SNOW.
Inspector	HENRY WASHBURN.
Inspector	GEORGE W. CHAMBERLAIN.
Deputy Inspector	WILLIAM A. LEONARD.
Deputy Inspector	BENJAMIN B. CLARK.

WARD FIVE.

Warden	ALBERT J. GROVER.
Deputy Warden	JOHN W. HOWE.
Clerk	CHARLES H. HALE.
Deputy Clerk	G. H. OSBORNE.
Inspector	JOHN P. TENNEY.
Inspector	JAMES F. RUSSELL.
Deputy Inspector	FRED A. O'CONNOR.
Deputy Inspector	DANIEL KELLEHER.

WARD SIX.

Warden	SAMUEL M. JACKSON.
Deputy Warden	WILLIAM F. WOODMAN.
Clerk	ZADOC LONG.
Deputy Clerk	GEORGE E. WALES.
Inspector	JAMES W. HILL.
Inspector	ARTHUR MULDOON.
Deputy Inspector	GEORGE F. RICHARDSON.
Deputy Inspector	HOWARD CARLETON.

WARD SEVEN.

Warden	J. EDWIN WARNER.
Deputy Warden	AMASA W. B. HUFF.
Clerk	MOSES CLARK, JUN.
Deputy Clerk	HENRY C. DANIELS.
Inspector	GEORGE W. LAMSON.
Inspector	GEORGE S. WOODBRIDGE.
Deputy Inspector	ROBERT B. EDES.
Deputy Inspector	LEWIS H. FARLOW.

JOINT STANDING COMMITTEES OF THE CITY COUNCIL.

Committee on Finance and Salaries.

ALDERMEN.

BENJAMIN S. GRANT.

JOHN WARD.

COUNCILMEN.

President LEWIS E. COFFIN.

WARREN P. TYLER.

THEODORE W. GORE.

Committee on Accounts.

ALDERMEN.

FREDERICK JOHNSON.

JOHN WARD.

COUNCILMEN.

ANDREW J. FISKE.

ELLIS W. REDPATH.

HERBERT H. POWELL.

Committee on Public Property.

ALDERMEN.

BENJAMIN S. GRANT.

JOHN WARD.

COUNCILMEN.

EDWARD M. BILLINGS.

J. CHARLES KENNEDY.

ANDREW J. FISKE.

Committee on State Aid, Soldiers' Relief, and Military Affairs.

ALDERMEN.

FREDERICK JOHNSON.

JAMES H. NICKERSON.

COUNCILMEN.

EDMUND G. POND.

J. CHARLES KENNEDY.

HERBERT H. POWELL.

Committee on Fuel and Street Lights.

ALDERMEN.

J. EDWARD HOLLIS.

SETH K. HARWOOD.

COUNCILMEN.

ELLIS W. REDPATH.

EDWARD M. BILLINGS.

EVERETT E. MOODY.

Committee on Fire Department.

ALDERMEN.

GEORGE PETTEE.

J. EDWARD HOLLIS.

COUNCILMEN.

ANDREW J. FISKE.

ELLIS W. REDPATH.

HEMAN M. BURR.

Committee on Highways, Streets and Ways, Sidewalks, Drains and Sewers.

ALDERMEN.

JAMES H. NICKERSON.

GEORGE PETTEE.

SETH K. HARWOOD.

COUNCILMEN.

President LEWIS E. COFFIN.

THEODORE W. GORE.

N. HENRY CHADWICK.

HENRY H. READ.

Committee on Printing.

ALDERMAN.

SETH K. HARWOOD.

COUNCILMEN.

EDWARD M. BILLINGS.

EVERETT E. MOODY.

Committee on Ordinances.

ALDERMEN.

BENJAMIN S. GRANT.

FREDERICK JOHNSON.

COUNCILMEN.

ANDREW J. FISKE.

EDMUND G. POND.

HEMAN M. BURR.

Committee on Claims.

ALDERMEN.

J. EDWARD HOLLIS.

FREDERICK JOHNSON.

COUNCILMEN.

President LEWIS E. COFFIN.

J. CHARLES KENNEDY.

HEMAN M. BURR.

Committee on Almshouse and Poor.

ALDERMAN.

GEORGE PETTEE.

COUNCILMEN.

GEORGE D. DIX.

HENRY H. READ.

Committee on Assessors' Department.

ALDERMAN.

JOHN WARD.

COUNCILMEN.

N. HENRY CHADWICK.

GEORGE D. DIX.

Highway Surveyors.

ALDERMEN

JAMES H. NICKERSON.

GEORGE PETTEE.

SETH K HARWOOD.

COUNCILMEN.

President LEWIS E. COFFIN.	THEODORE W. GORE.
N. HENRY CHADWICK.	HENRY H. READ.

Committee on Parks, Squares, and Burial Grounds.

ALDERMEN.

GEORGE PETTEE.	FREDERICK JOHNSON.
J. EDWARD HOLLIS.	

COUNCILMEN.

GEORGE D. DIX.	WARREN P. TYLER.
ELLIS W. REDPATH.	HENRY H. READ.

JOINT SPECIAL COMMITTEES.

Sewerage.

ALDERMEN.

JOHN WARD.	SETH K. HARWOOD.
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COUNCILMEN.

N. HENRY CHADWICK.	GEORGE D. DIX.
HEMAN M. BURR.	

Rules and Orders.

ALDERMEN.

BENJAMIN S. GRANT.	JAMES H. NICKERSON.
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COUNCILMEN.

J. CHARLES KENNEDY.	HEMAN M. BURR.
EVERETT E. MOODY.	

Read Fund.

ALDERMEN.

SETH K. HARWOOD.	J. EDWARD HOLLIS.
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COUNCILMEN.

President LEWIS E. COFFIN.	J. CHARLES KENNEDY.
HERBERT H. POWELL.	WARREN P. TYLER.

STANDING COMMITTEE, BOARD OF MAYOR AND ALDERMEN.

Committee on Police.

THE MAYOR.

SETH K. HARWOOD.

JOHN WARD.

Committee on Licenses, Weights and Measures.

ALDERMEN.

FREDERICK JOHNSON.

J. EDWARD HOLLIS.

Committee on Elections.

ALDERMEN.

GEORGE PETTEE.

JAMES H. NICKERSON.

STANDING COMMITTEE, BOARD OF ALDERMEN.

Committee on Enrolled Ordinances and Resolutions.

ALDERMEN.

BENJAMIN S. GRANT.

FREDERICK JOHNSON.

STANDING COMMITTEE OF THE COMMON COUNCIL.

Committee on Enrolled Ordinances and Resolutions.

COUNCILMEN.

ANDREW J. FISKE.

EDMUND G. POND.

HEMAN M. BURR.

Clerk of Committees.

BENJAMIN F. OTIS.

DUTIES OF THE AUDITOR OF ACCOUNTS.

THE following are the important provisions of the Ordinance setting forth the duties of the City Auditor:—

The Auditor shall receive all accounts and claims against the City, after the same shall have been certified by the Committee, or the proper certifying officers authorized on behalf of the City to make the contract, or cause the expenditure to be made. He shall carefully examine all such accounts and claims, see that they are correctly cast and duly authorized by the City Council or its order, and, having certified to the same, shall present them properly filed and labelled to the Committee on Accounts.

The Auditor shall act as clerk of the several standing and joint standing committees, and as secretary of the Sinking Fund Commissioners and Trustees of the Read Fund, without extra compensation.

The Auditor, on or before the first day of March annually, shall make a report to the City Council of the receipts and expenditures of the past financial year, in detail, and shall give, in his report, a schedule of the property of the City and of leases thereof, and an exhibit of the loans or debts, bearing interest, due from the City, the rates of interest, and the time when payable. He shall each month transmit to the Mayor, and each member of the City Council, a statement showing the amounts expended and unexpended of each appropriation.

AUDITOR'S REPORT.

CITY OF NEWTON, AUDITOR'S DEPARTMENT,
March 1, 1888.

TO THE HONORABLE CITY COUNCIL.

Gentlemen, — In conformity with the requirements of the several sections of the City Ordinances, I have the honor to present herewith the Annual Report of the receipts and expenditures of the City of Newton for the financial year commencing Jan. 1, and terminating Dec. 31, 1887, with a detailed account of each department, a statement of the liabilities and assets, a table showing the funded debt, the rates of interest, and times the notes and bonds are payable, another showing appropriations, mayor's drafts, treasurer's payments and balances, a statement of the Sinking Funds and of the Read Fund, a summary statement of receipts and expenditures for the year, a statistical table, showing the number of polls, real and personal estate, town, city, county, and state taxes, rate of taxation, appropriations, etc., with the number of houses from year to year, for twenty-seven consecutive years. Among the remaining tabulations will be found a schedule of the City property so arranged as to show in separate classification the property belonging to the almshouse, fire, highway, school, and other departments. In addition to these, is also given such other information appertaining to the fiscal interests of the City as may possess general interest.

Very respectfully,

BENJAMIN F. OTIS,

Auditor.

CITY OF NEWTON, Dec. 31, 1887.

TO THE HONORABLE MAYOR AND CITY COUNCIL :

Gentlemen,—In accordance with Sect. 11, Ordinance 4, I have the honor to lay before you the statement of the receipts and expenditures of the Treasury Department for the year ending Dec. 31, 1887.

Very respectfully yours,

JOHN A. KENRICK,
Treasurer and Collector.



CITY TREASURER'S ACCOUNT.

CITY OF NEWTON *in account with* JOHN A. KENRICK,
Treasurer and Collector.

DR.

Almshouse expenses and repairs	\$3,583 40
Armory rent and expenses	850 60
Auburndale tunnel	12 31
Books, stationery, and printing	2,435 98
Board of Health	3,435 89
Conveyance of pupils	746 25
Curbing	1,500 00
City Hall expenses	1,876 63
County tax	17,423 38
Corporation tax	2 22
City Engineers' Department	7,534 46
Drains and culverts	10,599 44
Evening schools	1,223 04
Fire Department	27,373 23
Funded debt, 6 per cent note paid	20,000 00
Funded debt, 4 per cent school-loan note paid .	5,150 00
Funded debt, 3½ per cent Newton Free Library note paid	4,600 00

Amount carried forward \$108,346 83

<i>Amount brought forward</i>	\$108,346 83
Funded debt, 3½ per cent High School note	
(land) paid	5,000 00
Funded debt, 3½ per cent High-School note	
(building) paid.	4,500 00
Gravel land	3,002 25
Highways, general repairs	63,675 90
Highways, widenings and improvements	21,434 29
Improvements on public squares	2,755 66
Interest on city loans	20,546 46
Interest on temporary loans	8,648 02
Interest on water bonds	55,740 00
Indigent soldiers and sailors	842 00
Kenrick Fund	423 74
Land damages	516 00
Memorial Day	400 00
Miscellaneous expenses	18,725 11
Newton Free Library	8,505 86
Newton Free Library extension	13,020 58
Newton High School extension	25,226 59
Newton Cottage Hospital.	1,000 00
National Bank tax	1,609 80
Overlay, 1886	2,001 81
Overlay, 1887	5,716 87
Police Department	23,876 96
Poor out of almshouse	8,254 72
Public property	14,283 73
Removal of ashes	3,342 79
Read Fund	1,732 24
<i>Amount carried forward</i>	\$423,128 21

<i>Amount brought forward</i>	\$423,128 21
Salaries	16,374 75
Schools	102,815 65
Schools, incidentals	13,653 21
Sidewalks.	11,000 00
Sinking fund, city debt	21,500 00
Sinking fund, school loan	4,500 00
Sinking fund, water debt	20,000 00
Sinking fund, public-park loan	1,512 15
State tax	37,260 00
Street-lights	23,565 41
State aid	956 00
Suspense account	40 00
Temporary loans	433,700 00
Thompsonville School land	487 50
Use of hydrants	9,420 00
Water construction	79,189 17
Water maintenance	14,351 92
Water maintenance, meters, and service pipes	4,105 80
Water rebate	346 70
Watering streets	5,745 01
Balance in the treasury, Dec. 31, 1887	33,593 39

\$1,257,244 87

C.R.

Balance in treasury, Dec. 31, 1886	\$44,638 22
Almshouse	2,604 03
Armory	800 00
Betterments, Farlow Park	1,010 05

Amount carried forward \$49,052 30

<i>Amount brought forward</i>	\$19,052 30
City Hall	839 50
Collector's fees	479 84
Corporation tax	39,733 51
Dog tax	2,337 66
Druggists' licenses	19 00
Fire Department	50 00
Foreign ships	2,012 34
Funded debt, 4 per cent water scrip	84,000 00
Highways	985 10
Interest on Farlow Park betterments	145 11
Interest on bank deposits	504 27
Interest on taxes	2,253 98
Interest on city loans	5 52
Interest on water scrip	223 89
Indigent soldiers and sailors	439 50
Kenrick Fund	928 64
Miscellaneous	281 56
National Bank tax	11,259 96
Newton Free Library catalogue account	16 00
Police	1,119 81
Poor out of almshouse	1,338 90
Peddlers' licenses	44 00
Public property	533 14
Record and other fees	535 60
Read Fund	1,588 00
Premium on tax sale	97 00
Premium on water scrip	148 00
Sinking fund, commissioners to pay note	20,000 00
<i>Amount carried forward</i>	<u>\$220,972 13</u>

<i>Amount brought forward</i>	.	.	.	.	.	\$220,972 13
Sidewalks and curbing	.	.	.	.	.	579 85
School incidentals	.	.	.	.	.	22 64
State aid	.	.	.	.	.	1,010 95
Taxes, 1883	.	.	.	.	.	15 84
Taxes, 1884	.	.	.	.	.	6 88
Taxes, 1885	.	.	.	.	.	513 25
Taxes, 1886	.	.	.	.	.	75,575 25
Taxes, 1887	.	.	.	.	.	425,826 66
Tuition non-resident pupils	.	.	.	.	.	772 00
Temporary loans	.	.	.	.	.	465,700 00
Water maintenance, meters and service pipes	.	.	.	.	.	5,194 64
Water-rates	.	.	.	.	.	17,788 54
Water rent of meters	.	.	.	.	.	2,310 76
Water-rates by meter	.	.	.	.	.	39,460 51
Water construction	.	.	.	.	.	1,479 21
Water rebate	.	.	.	.	.	15 76
						<hr/>
						\$1,257,244 87
						<hr/>

NEWTON, Dec. 31, 1887.

The Joint Committee on Finance beg leave to report, that, in pursuance of Sect. 13, Ordinance 4, they have examined the books and accounts of the Treasurer and Collector for the financial year ending Dec. 31, 1887, and find them correct in all respects, and all payments properly vouched.

Cash on hand, Dec. 31, 1886	.	.	.	.	.	\$44,638 22
Total cash receipts for year ending Dec. 31,						
1887	1,212,606 65

<i>Amount carried forward</i>	\$1,257,244 87
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<i>Amount brought forward</i>	\$1,257,244 87
Payments for the year	1,223,651 48
	<hr/>
Cash on hand at close of business, Dec. 31,	
1887	\$33,593 39

This balance has been verified by examination of the bank balances to the credit of the City, and cash and cash items in the office.

They further report that there remains due and uncollected the following taxes and assessments:—

Taxes of 1883 and previous years	\$2,089 05
Taxes of 1884	1,656 58
Taxes of 1885	1,798 19
Taxes of 1886	3,300 11
Taxes of 1887	97,199 18
	<hr/>
	\$106,043 11
Curbing and highway assessments	833 49
Betterments on drains, Wards 1 and 2, estimated	700 00
Betterments on Farlow Park	344 00
	<hr/>
Total	\$107,920 60

Respectfully submitted.

B. S. GRANT,	} Committee
JOHN WARD,	
LEWIS E. COFFIN,	
WARREN P. TYLER,	
THEODORE W. GORE,	
	on
	Finance.

**LIABILITIES OF THE CITY OF NEWTON TO DEC. 31, 1887,
INCLUSIVE.**

Water loan, 6 per cent . .	\$600,000 00	
Accrued interest on same . .	18,000 00	
Water loan, 5 per cent . .	250,000 00	
Accrued interest on same . .	6,250 00	
Water loan, 4 per cent . .	265,000 00	
Accrued interest on same . .	2,650 00	
	<hr/>	\$1,141,900 00
Town note, 6½ per cent . .	\$46,000 00	
Accrued interest on same . .	581 59	
	<hr/>	46,581 59
Town notes, 6 per cent . .	\$127,000 00	
Accrued interest on same . .	1,894 28	
	<hr/>	128,894 28
Municipal bonds, 5 per cent . .	\$34,000 00	
Accrued interest on same . .	850 00	
	<hr/>	34,850 00
Public park bonds, 4 per cent, . .	\$25,000 00	
Accrued interest on same . .	250 00	
	<hr/>	25,250 00
Schoolhouse notes, 4 per cent . .	\$36,050 00	
Accrued interest on same . .	624 87	
	<hr/>	36,674 87
School loan bonds, 4 per cent . .	\$44,000 00	
Accrued interest on same . .	440 00	
	<hr/>	44,440 00
High School loan, 3½ per cent, . .	\$40,500 00	
Accrued interest on same . .	330 75	
	<hr/>	40,830 75
<i>Amount carried forward . . .</i>	<i>. . .</i>	<hr/> \$1,499,421 49

<i>Amount brought forward.</i>	.	.	.	\$1,499,421 49
High School land loan, $3\frac{1}{2}$ per cent.	.	.	.	\$5,000 00
Accrued interest on same	.			45 69
				<hr/> 5,045 69
Newton Free Library loan, $3\frac{1}{2}$ per cent.	.	.	.	\$18,400 00
Accrued interest on same	.			155 63
				<hr/> 18,555 63
Temporary loans	.	.	.	\$101,700 00
Accrued interest on same	.			745 88
				<hr/> 102,445 88
Uninvested portion of principal of Kenrick Fund	.			\$3,250 00
Accrued interest on same	.			142 19
				<hr/> 3,392 19
Suspense account, amount in treasury, subject to call by sundry parties	.	.	.	738 05
Read Fund income	.	.	.	946 32
Premium on tax sale	.	.	.	109 00
Mayor's warrants unpaid, appropriation, etc.,				19,965 39
Mayor's warrants unpaid, water construction.				1,202 02
				<hr/>
				<u>\$1,651,821 66</u>
<i>Amount carried forward.</i>	.	.	.	\$1,651,821 66

Amount brought forward. . . . \$1,651,821 66

DETAILED STATEMENT OF ASSETS.

Balance of taxes, 1879 to 1883 in- clusive . . .	\$2,089 05
Balance of taxes, 1884 . . .	1,656 58
Balance of taxes, 1885 . . .	1,798 19
Balance of taxes, 1886 . . .	3,300 11
Balance of taxes, 1887 . . .	97,199 18
	<hr/>
	\$106,043 11

Due from Commonwealth of
Massachusetts, as follows: —

On account of aid to soldiers and sailors under Chapters 301 and 252, Acts of 1879 .	1,500 00
Balance of corporation tax .	11,000 00
Due from county treasurer, — dog tax for 1887 . . .	2,690 40

Due from miscellaneous
sources, viz.: —

From sundry persons for bet- terments on drains, Wards 1 and 2, estimated . . .	700 00
From sundry persons for bet- terments on Farlow Park .	344 00

<i>Amounts carried forward.</i>	<hr/>	<hr/>	<hr/>
	\$122,277 51	\$1,651,821 66	

<i>Amounts brought forward .</i>	\$122,277 51	\$1,651,821 66
From sundry persons for side-		
walks, curbing assessments,		
etc.	833 49	
Cash on hand	33,593 39	

Sinking Funds.

Water debt sinking fund : —

City of Newton		
water bonds,		
5 per cent	\$62,000 00	
City of Newton		
water bonds,		
4 per cent	125,000 00	
City of Newton		
schoolhouse		
note, 4 per		
cent	5,150 00	
Note of Boston		
and Maine		
R.R. Co., 5		
per cent	29,000 00	
Cash on deposit		
on interest	1,661 66	
	<hr/>	\$222,811 66

City debt sinking fund : —

City of Newton			
water bonds,			
5 per cent	\$11,000 00		
<i>Am'ts carried</i>	<hr/>	<hr/>	<hr/>
<i>forward .</i>	\$11,000 00	\$379,516 05	\$1,651,821 66

<i>Am'ts brought forward .</i>	\$11,000 00	\$379,516 05	\$1,651,821 66
City of Newton water bonds, 4 per cent .	15,000 00		
Note of Boston and Maine R.R. Co., 5 per cent .	3,000 00		
Cash on deposit on interest .	808 95		
	<hr/>	29,808 95	
Public park sinking fund:—			
City of Newton water bonds, 4 per cent .	\$12,000 00		
Cash on deposit on interest .	2,153 88		
	<hr/>	14,153 88	
School loan sinking fund:—			
City of Newton water bonds, 4 per cent .	\$4,000 00		
Note of Boston and Maine R.R. Co., 5 per cent .	3,000 00		
Cash on deposit on interest .	2,144 88		
	<hr/>	9,144 88	
		<hr/>	432,623 76
			<hr/>
			\$1,219,197 90

RECAPITULATION.

Water Debt.

Water loan	\$1,115,000 00	
Accrued interest on same	26,900 00	
Mayor's warrants unpaid for construction	1,202 02	
	<hr/>	
	\$1,143,102 02	
Sinking fund	222,811 66	
Net water liability	<hr/>	\$920,290 36

City Debt, exclusive of Water Debt.

Town notes	\$173,000 00	
Accrued interest on same	2,475 87	
	<hr/>	\$175,475 87
Municipal bonds	\$34,000 00	
Accrued interest on same	850 00	
	<hr/>	34,850 00
Public Park bonds	\$25,000 00	
Accrued interest on same	250 00	
	<hr/>	25,250 00
Schoolhouse notes	\$36,050 00	
Accrued interest on same	624 87	
	<hr/>	36,674 87
School loan bonds	\$44,000 00	
Accrued interest on same	440 00	
	<hr/>	44,440 00
High School loan	\$40,500 00	
Accrued interest on same	330 75	
	<hr/>	40,830 75
	<hr/>	
Amount carried forward		\$357,521 49

<i>Amount brought forward.</i>	.	.	.	\$357,521 49
High School land loan	.	.	\$5,000 00	
Accrued interest on same	.	.	45 69	
			<hr/>	5,045 69
Newton Free Library loan	.	.	\$18,400 00	
Accrued interest on same	.	.	155 63	
			<hr/>	18,555 63
Temporary loans	.	.	\$101,700 00	
Accrued interest on same	.	.	745 88	
			<hr/>	102,445 88
Uninvested portion of principal of Kenrick Fund	.	.	\$3,250 00	
Accrued interest on same	.	.	142 19	
			<hr/>	3,392 19
Suspense account, amount in treasury subject to call by sundry parties	.	.	.	738 05
Read Fund income	.	.	.	946 32
Premium on tax sale	.	.	.	109 00
Mayors' warrants unpaid, appropriations, etc	.	.	.	19,965 39
			<hr/>	\$508,719 64
Cash on hand	.	.	\$33,593 39	
Sinking fund	.	.	29,808 95	
Public Park sinking fund	.	.	14,153 88	
School loan sinking fund	.	.	9,144 88	
Balance taxes uncollected	.	.	106,043 11	
Other assets uncollected	.	.	17,067 89	
			<hr/>	209,812 10
Net city liability	.	.		<u><u>\$298,907 54</u></u>

RECEIPTS.

The receipts for the year ending Dec. 31, 1887, are shown in the aggregates, as credited in the following accounts : —

Number of
Account.

1.	Almshouse	\$2,604 03
2.	Armory	800 00
3.	Betterments	1,010 05
4.	City Hall	839 50
5.	Collector's fees	479 84
6.	Corporation tax	39,733 51
7.	Dog tax	2,337 66
8.	Druggists' license fees	19 00
9.	Fire department	50 00
10.	Funded debt, water bonds	84,000 00
11.	Highways, general repairs	985 10
12.	Interest on Farlow Park betterments	145 11
13.	Interest on deposits	504 27
14.	Interest on taxes	2,253 98
15.	Interest on city loans	5 52
16.	Interest on water bonds	223 89
17.	Indigent soldiers and sailors	439 50
18.	Kenrick Fund income	928 64
19.	Miscellaneous	281 56
20.	National Bank tax	11,259 96
21.	Newton Free Library, catalogue account,	16 00
22.	Police Department	1,119 81
23.	Poor out of almshouse	1,338 90
24.	Peddlers' licenses	44 00

Amount carried forward \$151,419 83

	<i>Amount brought forward</i>	.	.	.	\$151,419 83
25.	Public property	.	.	.	533 14
26.	Premium on tax sale	.	.	.	97 00
27.	Premium on water bonds	.	.	.	148 00
28.	Record and other fees	.	.	.	535 60
29.	Read Fund income	.	.	.	1,588 00
30.	School incidentals	.	.	.	22 64
31.	Ships engaged in foreign trade	.	.	.	2,012 34
32.	Sinking fund commissioners	.	.	.	20,000 00
33.	Sidewalks and curbing	.	.	.	579 85
34.	State aid	.	.	.	1,010 95
35.	Taxes 1883 and previous years	.	.	.	15 84
36.	Taxes 1884	.	.	.	6 88
37.	Taxes 1885	.	.	.	513 25
38.	Taxes 1886	.	.	.	75,575 25
39.	Taxes 1887	.	.	.	425,826 66
40.	Tuition for non-resident pupils	.	.	.	772 00
41.	Temporary loans	.	.	.	465,700 00
42.	Water meters and service-pipe	.	.	.	5,194 64
43.	Water rates	.	.	.	17,788 54
44.	Water rates by meter	.	.	.	39,460 51
45.	Water Department.	.	.	.	2,310 76
46.	Water construction	.	.	.	1,479 21
47.	Water rebate	.	.	.	15 76
					<hr/>
	Total receipts	.	.	.	\$1,212,606 65

EXPENSES.

The claims for the year ending Dec. 31, 1887, as approved and drawn for in the auditor's office, are shown in the aggregates as charged to the following accounts:—

Number of
Account.

1.	Alms-house expenses and repairs	\$3,852 33
2.	Armory expenses	843 95
3.	Addition to Newton Free Library building	11,520 58
4.	Books, stationery, and printing	2,794 86
5.	Board of Health	3,639 88
6.	Burial grounds	393 12
7.	City engineer's department	7,600 02
8.	City Hall expenses	1,923 19
9.	Fire Department	27,061 77
10.	Funded debt, town note	20,000 00
11.	Funded debt, schoolhouse note	5,150 00
12.	Funded debt, school note for land	5,000 00
13.	Funded debt, High School building	4,500 00
14.	Funded debt, Newton Free Library building	4,600 00
15.	Highways, curbing	1,882 75
16.	Highways, drains and culverts	10,170 98
17.	Highways, general repairs	63,884 19
18.	Highways, gravel land	3,000 00
19.	Highways, land damages	516 00
20.	Highways, removal of ashes	3,293 82
21.	Highways, sidewalks and street-crossings,	14,037 27
<i>Amount carried forward</i>		<u>\$195,664 71</u>

	<i>Amount brought forward</i>	\$195,664 71
22.	Highways, widening, reconstruction and improvements	21,364 31
23.	Interest on city loans, permanent	20,546 46
24.	Interest on city loans, temporary	8,664 19
25.	Interest on water bonds	55,740 00
26.	Indigent soldiers and sailors	853 00
27.	Kenrick Fund income	173 74
28.	Memorial Day	400 00
29.	Miscellaneous expenses	16,257 51
30.	Newton Free Library	8,500 00
31.	Newton High School building (enlarge- ment)	21,726 59
32.	Newton Cottage Hospital	1,000 00
33.	Parks and squares	2,291 69
34.	Police Department	23,344 85
35.	Poor out of almshouse	8,269 41
36.	Public property	13,161 12
37.	Read Fund income	1,901 49
38.	Salaries	16,492 52
39.	Schools, conveyance of pupils	676 25
40.	Schools, evening	1,217 89
41.	Schools, general appropriation	102,815 65
42.	Schools, incidentals	11,898 43
43.	Sinking fund, city debt	21,500 00
44.	Sinking fund, school loan	4,500 00
45.	Sinking fund, water bonds	20,000 00
46.	Sinking fund, public-park loan	1,512 15
47.	State aid	945 00
	<i>Amount carried forward</i>	\$581,416 96

	<i>Amount brought forward</i>	.	.	.	\$581,416 96
48.	Street-light department	.	.	.	24,002 02
49.	Suspense account	.	.	.	40 00
50.	Taxes, 1887, county	.	.	.	17,423 38
51.	Taxes, 1887, corporation	.	.	.	2 22
52.	Taxes, 1887, National Bank	.	.	.	1,609 80
53.	Taxes, 1887, State	.	.	.	37,260 00
54.	Temporary loans	.	.	.	433,700 00
55.	Thompsonville Schoolhouse, land for	.	.	.	487 50
56.	Water construction	.	.	.	77,511 28
57.	Water maintenance	.	.	.	13,974 71
58.	Water meters and service pipe	.	.	.	3,998 79
59.	Water rebate	.	.	.	363 05
60.	Watering streets, and water for same	.	.	.	5,762 51
61.	Water, use of hydrants	.	.	.	9,420 00
Total expenses					.
					<u>\$1,206,972 22</u>

TABLE SHOWING APPROPRIATIONS, TRANSFERS, MAYOR'S WARRANTS, TREASURER'S PAYMENTS, DIFFERENCES, EXCESS AND DEFICIENCY ACCOUNTS.

OBJECT OF APPROPRIATION.	Appropriations for 1887.	Transfers.	Total Appropriations.	Mayor's Warrants.	Treasurer's Payments.	Differences.	EXCESS AND DEFICIENCY ACCOUNT.	
							Overdrawn.	Unexpended.
Almshouse expenses and repairs	\$4,000 00	-	\$4,000 00	\$3,852 33	\$3,583 40	-\$268 93	-	\$147 67
Armory expenses	1,000 00	-	1,000 00	843 95	850 60	6 65	-	156 05
Books, Stationery, and Printing	2,600 00	-	2,600 00	2,794 86	2,435 98	-358 88	\$194 86	-
Additional appropriation by order of City Council, 300 00								
Board of Health	4,000 00	-	4,000 00	3,639 88	3,435 89	-203 99	-	360 12
Burial grounds	400 00	-	400 00	393 12	-	-393 12	-	6 88
City Engineer's Department	7,600 00	-	7,600 00	7,600 02	7,534 46	-65 56	02	-
City Hall expenses	2,000 00	-	2,000 00	1,923 19	1,876 63	-46 56	-	76 81
Fire Department	26,200 00	-	26,200 00	27,061 77	27,373 23	311 46	861 77	-
Additional appropriation by order of City Council, 300 00								
Highways, curbing	2,000 00	-	2,000 00	1,882 75	1,500 00	-382 75	-	117 25
Additional appropriation by order of City Council, 500 00								
Highways, drains, and culverts	12,000 00	-	12,000 00	10,170 98	10,599 44	428 46	-	329 02
Highways, general repairs	61,160 10	\$1,500 00	62,660 10	63,884 19	63,675 90	-208 29	1,224 09	-
Additional appropriation by order of City Council, 1,160 10								
Highways, gravel land	3,000 00	-	3,000 00	3,000 00	3,002 25	2 25	-	-
Highways, land damages	1,000 00	-	1,000 00	516 00	516 00	-	-	484 00
Highways, removal of ashes	4,000 00	-	4,000 00	3,293 82	3,342 79	48 97	-	706 18
Highways sidewalks, and street crossings	14,300 00	-	14,300 00	14,037 27	11,000 00	-3,037 27	-	262 73
Additional appropriation by order of City Council, 3,300 00								
Highways, widening, reconstruction, and improvements	22,000 00	-	22,000 00	21,364 31	21,434 29	69 98	-	635 69
Additional appropriation by order of City Council, 2,000 00								
Indigent soldiers and sailors	1,000 00	-	1,000 00	853 00	842 00	-11 00	-	147 00
Interest on city loans, permanent	20,545 00	1 46	20,546 46	20,546 46	20,546 46	-	-	-

TABLE SHOWING APPROPRIATIONS, TRANSFERS, ETC. — *Concluded.*

OBJECT OF APPROPRIATION.	Appropriations for 1887.	Transfers.	Total Appropriations.	Mayor's Warrants.	Treasurer's Payments.	Differences.	EXCESS AND DEFICIENT ACCOUNT.	
							Overdrawn.	Unexpended.
Interest on city loans, temporary \$8,250 00 {	\$8,395 65	\$358 54	\$8,664 19	\$8,664 19	\$8,648 02	— \$16 17	—	—
Additional appropriation by order of City Council, 55 65 }								
Interest on water bonds	56,100 00	380 00	55,740 00	55,740 00	55,740 00	—	—	—
Memorial Day	400 00	—	400 00	400 00	400 00	—	—	—
Miscellaneous expenses \$7,500 00 {								
Additional appropriation by order of City Council, 8,000 00 }	15,500 00	—	15,500 00	16,257 51	18,725 11	2,467 60	\$757 51	—
Newton Free Library	8,500 00	—	8,500 00	8,500 00	8,505 86	5 86	—	—
Newton Free Library note	4,600 00	—	4,600 00	4,600 00	4,600 00	—	—	—
Newton Cottage Hospital	1,000 00	—	1,000 00	1,000 00	1,000 00	—	—	—
Parks and squares	2,500 00	—	2,500 00	2,291 69	2,755 66	463 97	—	\$208 31
Police Department	23,350 00	—	23,350 00	23,344 85	23,876 96	532 11	—	5 15
Poor out of almshouse	8,000 00	—	8,000 00	8,269 41	8,254 72	— 14 69	289 41	—
Public property	13,000 00	—	13,000 00	13,161 12	14,283 73	1,122 61	161 12	—
Salaries	16,145 00	—	16,145 00	16,492 52	16,374 75	— 117 77	347 52	—
Schools, conveyance of pupils	750 00	70 00	680 00	676 25	746 25	70 00	—	3 75
Schools, Evening	550 00	670 00	1,220 00	1,217 89	1,223 04	5 15	—	2 11
Schools, general appropriation \$101,000 00 {								
Schools, Dog Tax 1886, by order of City Council, 2,337 66 }	103,337 66	500 00	102,837 66	102,815 65	102,815 65	—	—	22 01
Schools, incidentals	12,000 00	100 00	11,900 00	11,898 43	13,653 21	1,754 78	—	1 57
Schoolhouse note (Williams and Eliot)	5,150 00	—	5,150 00	5,150 00	5,150 00	—	—	—
School note (land for High School)	5,000 00	—	5,000 00	5,000 00	5,000 00	—	—	—
School note (addition to High School building)	4,500 00	—	4,500 00	4,500 00	4,500 00	—	—	—
Sinking Fund, City Debt	21,500 00	—	21,500 00	21,500 00	21,500 00	—	—	—
Sinking Fund, School Loan	4,500 00	—	4,500 00	4,500 00	4,500 00	—	—	—
Sinking Fund, Water Bonds	20,000 00	—	20,000 00	20,000 00	20,000 00	—	—	—
State Aid	1,000 00	—	1,000 00	945 00	956 00	11 00	—	55 00

Street Light Department	\$22,000 00 }	24,000 00	-	24,000 00	24,002 02	23,565 41	-436 61	2 02	-
Additional appropriation by order of City Council, 2,000 00 }	12,000 00 }								
Use of hydrants		9,540 00	-	9,540 00	9,420 00	9,420 00	-	-	120 00
Water maintenance		14,000 00	-	14,000 00	13,974 71	14,351 92	377 21	-	25 29
Water meters and service pipe		4,000 00	-	4,000 00	3,968 79	4,105 80	107 01	-	1 21
Water, rebate on bills		500 00	-	500 00	363 05	346 70	-16 35	-	138 95
Watering streets, and water for same	\$5,500 00 }	5,750 00	-	5,750 00	5,762 51	5,745 01	-17 50	12 51	-
Additional appropriation by order of City Council, 250 00 }	250 00 }								
Less mayor's warrants of 1886, paid by treasurer in 1887	\$22,293 12					\$584,293 12	\$7,785 07	\$3,830 83	\$4,010 75
Less on account of Auburndale subway (special),	12 31						-5,595 44	-	3,830 83
Amount of mayor's warrants for 1887, paid by treasurer in 1888; appropriations	\$19,965 39					22,280 81			
Transferred from city treasury from receipts of interest on water bonds for the payment of interest on the Kenrick Fund not included in mayor's warrants	125 79					\$562,012 31			
Transferred into treasury		-	-	-	-	20,091 18		-	-
	\$582,283 41	\$582,283 41	-	\$582,283 41	\$582,103 49	\$582,103 49	\$2,189 63	-	\$179 92

STATEMENT OF THE KENRICK FUND.

The following is a statement of this fund and its income,
Jan. 1, 1888:—

Amount invested	\$750 00
Cash uninvested	3,250 00
	<hr/>
Total fund	<u>\$4,000 00</u>
Balance income on hand, Jan. 1, 1887	\$21 50
Income received in 1887, including interest received, January, 1887, for the year 1886	294 43
	<hr/>
	\$315 93
Amount distributed	173 74
	<hr/>
Balance	\$142 19

The distribution of the income of this fund has been made
in accordance with the terms of the donor, to persons
entitled to its benefits.

TAXES AND TAXABLE VALUATION.

The following will show the valuation of the property of
the city on which taxes were assessed for the year 1887, with
the amount of taxes and rate of taxation:—

Value of real estate	\$23,080,866 00
Value of personal estate	9,196,441 00
	<hr/>
	\$32,277,307 00

Tax received for corporation stocks	\$39,733 51
Tax received for bank stocks	11,259 96
	<hr/>
	\$50,993 47
City appropriations for current expenses	\$562,080 00
Deduct estimated receipts for 1887	115,850 00
	<hr/>
	\$446,230 00
State tax	\$37,260 00
County tax	17,423 38
Overlay	9,718 07
	<hr/>
Total assessments	\$510,631 45
	<hr/>
Rate of taxation, \$15.80 on \$1,000.	

LEDGER BALANCES.

DR.

Betterments Farlow Park	\$344 00
Betterments Newtonville drain	1,883 70
Bills receivable	250 00
Bills receivable Kenrick Fund	750 00
Cash	33,593 39
Public property owned by the City	980,177 85
Taxes 1883 and previous years	2,089 05
Taxes 1884	1,656 58
Taxes 1885	1,798 19
Taxes 1886	3,300 11
Taxes 1887	97,199 18
Water construction	1,118,339 11
	<hr/>
	\$2,241,381 16
	<hr/>

CR.

City of Newton	\$612,353 91
Funded debt $3\frac{1}{2}$ per cent library notes . . .	18,400 00
Funded debt $3\frac{1}{2}$ per cent High School notes, land	5,000 00
Funded debt $3\frac{1}{2}$ per cent High School notes, building	40,500 00
Funded debt 4 per cent school notes . . .	36,050 00
Funded debt 6 per cent city notes . . .	127,000 00
Funded debt $6\frac{1}{2}$ per cent city notes . . .	46,000 00
Funded debt 4 per cent school bonds . . .	44,000 00
Funded debt 4 per cent park bonds . . .	25,000 00
Funded debt 5 per cent municipal bonds . .	34,000 00
Funded debt 4 per cent water scrip . . .	265,000 00
Funded debt 5 per cent water scrip . . .	250,000 00
Funded debt 6 per cent water scrip . . .	600,000 00
Kenrick Fund	4,142 19
Mayor's warrant unpaid bills	19,965 39
Overlay 1884	432 66
Overlay 1885	3,336 44
Overlay 1886	2,706 00
Overlay 1887	4,001 20
Premium on tax sale	109 00
Read Fund income	946 32
Suspense account	738 05
Temporary loans	101,700 00
	<hr/>
	\$2,241,381 16
	<hr/>

REPORT OF THE SINKING FUND COMMISSIONERS.

The Sinking Fund Commissioners of the City of Newton beg leave to report to the City Council their doings for 1887 as follows:—

Water Debt Sinking Fund.

On hand in cash and securities at par, Jan. 1, 1887	\$194,277 37
Received interest on securities, bank deposits and loans	8,534 29
Received appropriation by the City for 1887	20,000 00
	<hr/>
	\$222,811 66

Invested as follows:—

City of Newton 5 per cent water bonds, due July 1, 1906	\$62,000 00
City of Newton 4 per cent water bonds, due Oct. 1, 1910	62,000 00
City of Newton 4 per cent water bonds, due April 1, 1914	63,000 00
City of Newton 4 per cent school note, due Jan. 25, 1894	5,150 00
Loan to Boston and Maine Railroad 5 per cent, due March 31, 1888	29,000 00
Cash on deposit in Everett National Bank	1,661 66
	<hr/>
	\$222,811 66

City Debt Sinking Fund.

On hand in cash and securities at par, Jan. 1, 1887	\$27,096 09
Received interest on securities, loans and bank deposits	1,212 86
	<hr/>
<i>Amount carried forward</i>	<i>\$28,308 95</i>

<i>Amount brought forward</i>	\$28,308 95
Received appropriation by the City for 1887 .	21,500 00
	<hr/>
	\$49,808 95
Less paid City Treasurer to retire note due	
Oct. 3, 1887	20,000 00
	<hr/>
	\$29,808 95

Invested as follows : —

City of Newton 5 per cent water bonds, due	
July 1, 1906	\$11,000 00
City of Newton 4 per cent water bonds, due	
Oct. 1, 1910	13,000 00
City of Newton 4 per cent water bonds, due	
April 1, 1914	2,000 00
Loan to Boston and Maine Railroad 5 per	
cent, due March 31, 1888.	3,000 00
Cash on deposit in Everett National Bank .	808 95
	<hr/>
	\$29,808 95

Public Park Sinking Fund.

On hand in cash and securities at par, Jan. 1,	
1887	\$12,131 47
Received on account of betterments collected	
by the city	1,512 15
Received interest on securities, loans and bank	
deposits	510 26
	<hr/>
	\$14,153 88

Invested as follows : —

City of Newton 4 per cent water bonds, due	
April 1, 1914	\$12,000 00
Cash on deposit in National Revere Bank .	2,153 88
	<hr/>
	\$14,153 88

School Loan Sinking Fund.

On hand in cash and securities at par, Jan. 1,	
1887	\$4,473 38
Received appropriation by the City for 1887 .	4,500 00
Received interest on securities and bank de-	
posits	171 55
	<hr/>
	\$9,144 88

Invested as follows : —

City of Newton 4 per cent water bonds, due	
April 1, 1914	\$4,000 00
Loan to Boston and Maine Railroad 5 per	
cent, due March 31, 1888	3,000 00
Cash on deposit in National Revere Bank .	2,144 88
	<hr/>
	\$9,144 88

The only transaction worthy of note during the year was the fact that we have paid the City Treasurer \$20,000 from the City Debt Sinking Fund, to enable him to retire a note of same amount which fell due Oct. 3, 1887.

We also reported in October last that there should be appropriated for the year 1888 as follows : —

For the Water Debt Sinking Fund	\$22,000 00
For the City Debt Sinking Fund	23,000 00
For the School Loan Sinking Fund	4,500 00

Respectfully submitted,

GEO. S. BULLENS,
ALDEN SPEARE,
GEORGE C. LORD,
Sinking Fund Commissioners.

REPORT OF THE TRUSTEES OF THE READ FUND.

In accordance with Ordinance XLIV., Section 3, we beg leave to report to the City Council as follows:—

Amount of interest collected for 1887 . . .	\$1,588 00
Less paid to the Treasurer of the City of Newton	1,588 00

Principal invested as follows:—

Notes of the City of Newton, dated Dec. 1, 1887, on 12 months with interest semi- annually at 5 per cent per annum . . .	\$39,700 00
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GEO. S. BULLENS,
ALDEN SPEARE,
GEORGE C. LORD,
Trustees of the Read Fund.

STATEMENT IN DETAIL OF RECEIPTS.

Almshouse.

Received from N. D. Moody, warden, for sale of hay, straw, produce, wood, etc. . . .	\$2,492 03
Received for support of Mrs. Thomas . . .	55 00
Received for support of Mrs. Farnham . . .	57 00
Total, as per item No. 1 of receipts . . .	<hr/> \$2,604 03

Armory.

Received from Commonwealth of Massachusetts for rent of armory for years 1886 and 1887, as per item No. 2 of receipts	\$800 00
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Betterments.

Received from sundry persons on account of Farlow Park, as per item No. 3 of receipts,	\$1,010 05
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City Hall.

Received for use of hall, etc.	\$339 50
Received from treasurer of county of Middlesex,	500 00
	<hr/>
Total, as per item No. 4 of receipts . . .	\$839 50

Collector's Fees.

Received from John A. Kenrick, treasurer and collector of taxes, for summonses, adver- tising tax sales, etc., as per item No. 5 of receipts	\$479 84
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Corporation Tax.

Received from Commonwealth of Massachusetts, as per item No. 6 of receipts	\$39,733 51
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Dog Tax.

Received from treasurer of county of Middlesex for dog tax, as per item No. 7 of receipts . . .	\$2,337 66
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Druggists' License Fees.

Received from sundry persons for liquor licenses of the sixth class, as per item No. 8 of receipts	\$19 00
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Fire Department.

Received from town of Needham for services of Engine No. 3, as per item No. 9 of receipts	\$50 00
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Funded Debt, Water Bonds.

Received from R. L. Day & Co. for 65 City of Newton water bonds, 4 per cent, \$1,000 each, on account of water construction .	\$65,000 00
Received from I. A. Evans & Co. for 19 City of Newton water bonds, 4 per cent, \$1,000 each, on account of water construction .	19,000 00
Total, as per item No. 10 of receipts .	<hr/> \$84,000 00

Highways, General Repairs.

Received from almshouse department for manure from city stables	\$272 00
Received from sundry persons for material, labor, etc.	713 10
Total, as per item No. 11 of receipts .	<hr/> \$985 10

Interest on Farlow Park Betterments.

Received from sundry persons interest on better- ments, as per item No. 12 of receipts .	\$145 11
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Interest on Deposits.

Received from Newton National Bank and First National Bank of West Newton, on daily balances, as per item No. 13 of receipts .	\$504 27
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Interest on Taxes.

Received from sundry persons interest on taxes, as per item No. 14 of receipts	\$2,253 98
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Interest on City Loans.

Received from sundry persons interest on loans, as per item No. 15 of receipts	\$5 52
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Interest on Water Bonds.

Received from R. L. Day & Co. accrued interest on \$65,000, 4 per cent water bonds, as per item No. 16 of receipts	\$223 89
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Indigent Soldiers and Sailors.

Received from Commonwealth of Massachu- setts, on account of aid to sundry persons, under Chap. 252, Acts of 1879, as per item No. 17 of receipts	\$439 50
--	----------

Kenrick Fund Income, etc.

Balance uninvested Jan. 1, 1887, in city treasury,	\$2,740 00
Balance of income on hand Jan. 1, 1887	21 50
Received from G. D. Parker, administrator of estate of Wales Tucker, amount of loan	330 00
Received from W. G. Lewis amount of loan	430 00
	<hr/>
	\$3,521 50

Income from investments in 1887, as per item No. 18 of receipts	168 64
	<hr/>
	\$3,690 14

Transferred from appropriation for interest on City loans (temporary) by order of City Council for interest on uninvested portion of Fund	125 79
	<hr/>

<i>Amount carried forward</i>	\$3,815 93
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<i>Amount brought forward</i>	\$3,815 93
Loaned and expended :—	
Amount loaned Thomas Harney .	\$250 00
Distributed per order Board of Aldermen, as per item No. 27 of expenses	173 74
Balance income on hand . .	142 19
	<hr/>
	\$565 93
Balance uninvested Jan. 1, 1888 .	<hr/> \$3,250 00

Miscellaneous.

Received from Henry F. Ross, portion paid for insurance library building	\$26 00
Received from M. C. Laffie for license as private detective	10 00
Amount transferred into City treasury, amount appropriated by City Council to refund taxes paid by Amasa Crafts on land in Ward 5 known as the schoolhouse lot .	245 56
Total, as per item No. 19 of receipts .	<hr/> \$281 56

National Bank Tax.

Received from Commonwealth of Massachu- setts National Bank tax, as per item No. 20 of receipts	\$11,259 96
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Newton Free Library. — Catalogue Account.

Received from librarian, for sale of catalogues, as per item No. 21 of receipts	\$16 00
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Police Department.

Received from Edward W. Cate, clerk of police court, fees, fees for witnesses, fines, and costs, as per item No. 22 of receipts . .	\$1,119 81
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Poor out of Almshouse.

Received from Commonwealth of Massachusetts for partial support, etc., of sundry persons	\$595 07
Received for partial support of J. C. Gipson .	150 14
Received from administrator of estate of John Grimes for funeral expenses	35 00
Received for partial support of H. J. Harris .	12 00
Received from city of Boston for partial support of sundry persons	75 01
Received from city of Waltham for partial support of sundry persons	300 62
Received from city of Somerville for partial support of sundry persons	16 25
Received from city of Cambridge	2 00
Received from town of Plymouth for partial support of sundry persons	37 45
Received from town of Blackstone for partial support of sundry persons	36 00
Received from town of Arlington for partial support of sundry persons	22 50
Received from town of Concord for partial support of sundry persons	17 17
Received from town of Watertown for partial support of sundry persons	16 15
Received from town of Needham for partial support of sundry persons	15 25
Received from town of Savoy for partial support of sundry persons	8 29
<hr/>	
Total, as per item No. 23 of receipts .	\$1,338 90

Peddlers' Licenses.

Received from sundry persons, as per item No.	
24 of receipts	\$44 00

Public Property.

Received from William Sullivan, for land on Chapel Street, from which the gravel had been removed	\$301 14
Received for rent of Prospect Schoolhouse Hall,	151 00
Received for rent of Mason Schoolhouse Hall .	6 00
Received from Auburndale Village Improve- ment Society for rent of old Williams Schoolhouse	50 00
Received from E. M. Fowle, Treasurer, for use of Crystal Pond	25 00
Total as per item No. 25 of receipts . . .	<hr/> \$533 14

Premium on Tax Sale.

Received from sundry persons, premium on real estate tax sale, as per item No. 26 of receipts	\$97 00
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Premium on Water Bonds.

Received from R. L. Day & Co. $\frac{38}{100}$ of 1 per cent on \$20,000 City of Newton bonds .	\$76 00
Received from R. L. Day & Co. $\frac{16}{100}$ of 1 per cent on \$45,000 City of Newton bonds .	72 00
Total as per item No. 27 of receipts . . .	<hr/> \$148 00

Record and Other Fees.

Received from City Clerk, for recording mort- gages, marriage certificates, assignments, etc., as per item No. 28 of receipts . . .	\$535 60
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Read Fund Income.

Received from the trustees of the Read Fund, interest on investments as per item No. 29 of receipts	\$1,588 00
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School Incidentals.

Received from sundry parties refund on bills, as per item No. 30 of receipts	\$22 64
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Ships engaged in Foreign Trade.

Received from Commonwealth of Massachusetts, on account of ships engaged in foreign trade, as per item No. 31 of receipts	\$2,012 34
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Sinking Fund Commissioners.

Received from the commissioners of the sinking funds of the City of Newton, for the pay- ment of a note of the town of Newton, as per item No. 32 of receipts	\$20,000 00
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Sidewalks and Curbing.

Received from sundry parties, on account of sidewalks and curbing, as per item No. 33 of receipts	\$579 85
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State Aid.

Received from Commonwealth of Massachusetts, on account of sundry persons, under chapter 301, Acts of 1879, as per item No. 34 of receipts	\$1,010 95
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Taxes of 1883 and Previous Years.

Balance uncollected Dec. 31, 1886	\$2,104 89
Received from sundry persons, since Dec. 31, 1886, as per item No. 35 of receipts	15 84
Balance uncollected Dec. 31, 1887	\$2,089 05

Taxes 1884.

Balance uncollected Dec. 31, 1886 . . .	\$1,663 46
Received from sundry persons, since Dec. 31, 1886, as per item No. 36 of receipts . .	6 88
	<hr/>
Balance uncollected Dec. 31, 1887 . . .	\$1,656 58

Taxes 1885.

Balance uncollected Dec. 31, 1886 . . .	\$2,311 44
Received from sundry persons, since Dec. 31, 1886, as per item No. 37 of receipts . .	513 25
	<hr/>
Balance uncollected Dec. 31, 1887 . . .	\$1,798 19

Taxes 1886.

Balance uncollected Dec 31, 1886 . . .	\$77,855 28
Supplementary assessments . . .	1,020 08
	<hr/>
	\$78,875 36
Received from sundry persons, since Dec. 31, 1886, as per item No. 38 of receipts . .	75,575 25
	<hr/>
Balance uncollected Dec. 31, 1887 . . .	\$3,300 11

Taxes 1887.

Amount assessed for State tax . . .	\$37,260 00
Amount assessed for county tax . . .	17,423 38
Amount assessed for city tax . . .	456,930 00
Tax on non-resident bank shares . . .	1,694 39
Overlay	9,718 07
	<hr/>
	\$523,025 84
Received from sundry persons to Dec. 31, 1887, as per item No. 39 of receipts . . .	425,826 66
	<hr/>
Balance uncollected Dec. 31, 1887 . . .	\$97,199 18

Tuition for Non-Resident Pupils.

Received from sundry non-residents for tuition,
as per item No. 40 of receipts . . . \$772 00

Temporary Loans.

Borrowed during the year, by authority of the City Council (in anticipation of taxes), for the payment of current expenses :—

Jan.	7.	F. S. Moseley, at $3\frac{7}{8}$ per cent per annum	\$30,000 00
Feb.	8.	Potter Lovell Company, at $3\frac{1}{2}$ per cent per annum	20,000 00
March	8.	Commonwealth of Massachusetts, at $3\frac{5}{8}$ per cent per annum	20,000 00
April	21.	Commonwealth of Massachusetts, at $3\frac{7}{8}$ per cent per annum	60,000 00
June	9.	Brewster, Cobb, & Estabrook, at 4 per cent per annum	25,000 00
June	25.	F. S. Moseley, at $3\frac{3}{4}$ per cent per annum	50,000 00
June	27.	Commonwealth of Massachusetts, at 4 per cent per annum	30,000 00
July	5.	Nantucket Institution for Savings, at $4\frac{1}{4}$ per cent per annum	6,000 00
July	5.	Mechanics' Savings Bank, Lowell, at $4\frac{1}{2}$ per cent per annum	50,000 00
July	8.	Brewster, Cobb, & Estabrook, at $4\frac{5}{8}$ per cent per annum	25,000 00

Amount carried forward \$316,000 00

<i>Amount brought forward</i>		\$316,000 00
July 20.	Commissioners of the sinking funds of the City of Newton, at $4\frac{1}{2}$ per cent per annum	9,000 00
Aug. 8.	Commonwealth of Massachusetts, at 5 per cent per annum	30,000 00
Aug. 10.	Nantucket Institution for Savings, at 5 per cent per annum	5,000 00
Aug. 29.	Institution for Savings, Roxbury, at ' 5 per cent per annum	10,000 00
Aug. 30.	Institution for Savings, Roxbury, at 5 per cent per annum	15,000 00
Oct. 1.	D. R. Emerson, at 5 per cent per annum	6,000 00
Oct. 1.	Commissioners of the sinking funds of the City of Newton, at $4\frac{1}{2}$ per cent per annum	4,000 00
Oct. 7.	Nantucket Institution for Savings, at $5\frac{1}{2}$ per cent per annum	6,000 00
Dec. 1.	Trustees of the Read Fund, at 5 per cent per annum	39,700 00
Dec. 29.	Commonwealth of Massachusetts, at 5 per cent per annum	25,000 00
Total, as per item No. 41 of receipts .		<hr/> \$465,700 00

Water Meters and Service Pipe.

Received from sundry persons for meters, service pipe, etc., as per item No. 42 of receipts, \$5,194 64

Water Rates.

Received from sundry persons for use of water
 in 1887 by schedule rates, as per item No.
 43 of receipts \$17,788 54

Water Rates by Meters.

Received from sundry persons for use of water
 in 1887, by meters, as per item No. 44 of
 receipts \$39,460 51

Water Department.

Received from sundry persons for rent of meters,
 as per item No. 45 of receipts \$2,310 76

Water Rebate.

Received from sundry persons refund of bills,
 as per item No. 47 of receipts \$15 76

STATEMENT IN DETAIL OF EXPENSES WITH APPROPRIATIONS, TRANSFERS, AND BALANCES.

Almshouse Expenses and Repairs.

Appropriation	\$4,000 00
N. D. Moody, services as warden	\$672 00
N. D. Moody, sundry cash payments,	203 66
Joseph Laird, services at almshouse	198 00
Mary Laird, services at almshouse	84 00
Emma King, services at almshouse	60 00
Anna Lee, services at almshouse	48 00
<i>Amounts carried forward</i>	<i>\$1,265 66</i>
	<i>\$4,000 00</i>

<i>Amounts brought forward .</i>	<i>. \$1,265 66</i>	<i>\$4,000 00</i>
Mary Condon, services at almshouse	33 00	
Maria James, services at almshouse .	24 00	
Tierna McDonald, services at alms-		
house	12 00	
Dr. James Utley, medical attendance	51 00	
Dr. F. E. Crockett, medical attend-		
ance	10 00	
Dr. D. E. Baker, medical attendance	5 00	
George H. Ingraham, medicines .	11 07	
E. J. Williams, medicines . . .	6 65	
Frank W. Freeman, medicines . .	5 95	
James McGourty, funeral services .	10 00	
Highway Department, manure from		
city stables	548 00	
Crocker & Eldredge, groceries .	398 01	
H. A. Sherman, groceries . . .	149 69	
B. B. Vassall, groceries . . .	7 80	
C. F. Eddy & Co., coal	221 47	
Water Department, use of water .	52 00	
V. A. Pluta, provisions	264 35	
Swift & Co., provisions	27 44	
W. B. Whittier, provisions . . .	7 25	
W. Henry Brackett, provisions .	2 12	
W. H. Mague, house offal . . .	147 77	
J. F. C. Hyde, wood	75 00	
W. A. Gates, wood	71 25	
Frank Linnell, fish and oysters .	58 91	
George H. Ellis, ice	43 75	
<i>Amounts carried forward .</i>	<i>. \$3,509 14</i>	<i>\$4,000 00</i>

<i>Amounts brought forward</i> .	\$3,509 14	\$4,000 00
M. E. Society, for rent of pew .	30 00	
Francis Murdock & Co., supplies .	85 31	
O. F. Lucas, supplies . . .	57 19	
John T. Moody, supplies . . .	49 20	
E. E. Moody, supplies . . .	11 07	
B. A. Atkinson & Co., supplies .	6 75	
Schlegel & Fottler, supplies . .	6 50	
L. Hefflon, supplies	6 49	
Ames Plow Co., supplies . . .	4 98	
E. & F. King & Co., supplies . .	60	
Frank Burnham, services . . .	19 26	
C. H. W. Moulton & Co., ladder .	10 80	
T. W. Mullen, blacksmithing . .	12 48	
Chas. A. Cole, blacksmithing . .	4 75	
McCarthy & Nugent, blacksmithing	4 74	
Robbins & Healey, material and labor	15 00	
H. H. Hunt, material and labor .	6 29	
Allen & Berry, material and labor .	68	
N. W. Tupper, grain	5 23	
Daniels' Nonantum Stables, use of team	2 50	
M. Frank Lucas, lumber	1 87	
A. D. Hall, provisions	1 50	
<hr/>		
Total, as per item No. 1 of expenses .		\$3,852 33
		<hr/>
Balance unexpended, transferred into excess and deficiency account		\$147 67

Armory Expenses.

Appropriation	\$1,000 00
B. S. Wetherbee, services as janitor, etc.	\$355 00
Newton & Watertown Gas Light Co., gas	214 66
Albert Brackett, coal	149 25
Water Department, use of water	12 00
Chas. S. Pulsifer, rent of land for rifle range	50 00
C. A. Purdy, material and labor	27 50
Chas. A. Hill, material and labor	14 50
M. C. Higgins, material and labor	12 25
Edward Pike, material and labor	5 29
Timothy Stuart, labor, men and teams	3 50
Total, as per item No. 2 of expenses	<u>\$843 95</u>
Balance unexpended, transferred into excess and deficiency account	\$156 05

Addition to Newton Free Library Building.

Henry F. Ross, payments on account of con- tract	\$8,688 89
Walworth Manf. Co., payment on account of contract	1,802 59
Moses Pond & Co., payment on account of con- tract	279 10
Allen & Kenway, services as architects	750 00
Total, as per item No. 3 of expenses	<u>\$11,520 58</u>

Books, Stationery, and Printing.

Appropriation	\$2,300 00	
Additional appropriation by order of City Council	300 00	
	<hr/>	\$2,600 00
George H. Pratt, printing auditor's report, etc.	\$861 98	
Fanning Printing Co., printing, etc.,	386 48	
Rand Avery Co. printing, etc. . .	229 27	
"Newton Graphic," printing, etc. .	223 91	
F. D. Graves, printing, etc. . . .	15 00	
Rockwell & Churchill, printing, etc.,	5 75	
G. E. Baird, printing, etc.	4 00	
Charles H. Stacy, stamped envelopes, etc.	232 71	
American Bank Note Company, check-books	102 00	
William M. Belcher & Co., caligraph,	60 00	
George D. Burrage, stamped en- velopes, etc.	45 00	
Newton Post-office, stamped en- velopes	55 00	
J. B. Turner, stamped envelopes . .	6 00	
J. Q. Fuller, Boston Directories . .	30 00	
Sanson Lime Pen Company, pens . .	27 00	
J. Q. Bradish & Co., pens	10 75	
J. B. Beers & Co., atlases	20 00	
"Boston Daily Advertiser," subscrip- tion	12 00	
Atherton Rubber Co., rubber bands .	19 50	
	<hr/>	
<i>Amounts carried forward . . .</i>	<i>\$2,346 35</i>	<i>\$2,600 00</i>

<i>Amounts brought forward .</i>	<i>.\$2,346 35</i>	<i>\$2,600 00</i>
Drew, Allis & Co., Newton Directo- ries	7 50	
Thomas Groom & Co., supplies .	185 79	
Samuel Ward Company, supplies .	87 61	
Library Bureau, supplies . . .	56 49	
M. R. Warren, supplies	37 73	
A. R. Gay & Co., supplies . . .	37 14	
U. Holzer, supplies	21 00	
Hooper, Lewis, & Co., supplies .	9 25	
S. G. Greenwood, supplies . . .	1 75	
A. L. Shipman's Sons, supplies .	1 75	
Carter, Rice, & Co., supplies . .	2 50	
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Total, as per item No. 4 of expenses .		\$2,794 86
<hr/>		
Amount overdrawn, transferred into excess and deficiency account		\$194 86

Board of Health.

Appropriation		\$4,000 00
Nathan Mosman, services as agent for board	\$800 00	
William H. Mague, collecting house offal, etc.	1,202 00	
John A. Kenrick, treasurer, highway dept., labor, men, and teams on drains	559 79	
George H. Cavanagh, material and labor	520 00	
<hr/>		
<i>Amounts carried forward</i>	<i>.\$3,081 79</i>	<i>\$4,000 00</i>

<i>Amounts brought forward .</i>	<i>.\$3,081 79</i>	<i>\$4,000 00</i>
The Marcellus Day Co., drain pipe .	321 60	
Jackson & Durkee, rubber boots .	71 50	
Dr. Eben Thompson, vaccinations .	15 25	
Dr. J. F. Frisbee, vaccinations .	8 50	
Dr. H. P. Bellows, vaccinations .	2 00	
Dr. F. E. Crockett, vaccinations .	1 00	
Dr. E. P. Scales, vaccinations .	1 00	
Fanning Printing Company, printing,	38 75	
"Newton Journal," printing .	10 75	
J. C. Clark Printing Co., blank-book,	8 87	
J. D. F. Brooks, binding records .	1 25	
Stephen F. Cate, use of teams .	34 00	
George W. Bush, use of teams .	6 00	
S. L. Pratt, use of teams .	1 50	
Joseph Lee, supplies .	18 85	
M. R. Warren, supplies .	5 25	
John W. Scott, blacksmithing .	1 90	
Murray & Farrell, blacksmithing .	1 77	
F. E. Hamblin, drain pipe .	1 35	
John F. McSherry, use of teams .	1 00	
S. B. Maxwell, burying two dogs .	2 00	
James O. Donnell, burying dog .	1 00	
T. E. Dunham, burying dog .	1 00	
M. J. McCarty, burying dog .	1 00	
Cornelius Bevine, burying pig .	1 00	
<hr/>		
Total, as per item No. 5 of expenses .		\$3,639 88
<hr/>		
Balance unexpended, transferred into excess		
and deficiency account .		\$360 12

Burial Grounds.

Appropriation		\$400 00
Services of Henry Ross, superintendent	\$200 00	
Material and labor	193 12	
	<hr/>	
Total, as per item No. 6 of expenses		\$393 12
		<hr/>
Balance unexpended, transferred into excess and deficiency account		\$6 88

City Engineer's Department.

Appropriation		\$7,600 00
Albert F. Noyes, services as city engineer	\$2,500 00	
Fred H. Barnes, services as assistant city engineer	1,040 00	
William S. French, services as assistant city engineer	858 00	
I. W. Hastings, services as assistant city engineer	759 00	
William P. Morse, services as assistant city engineer	660 19	
Arthur L. Woodruff, services as assistant city engineer	536 70	
Henry D. Woods, services as assistant city engineer	108 90	
Edward A. Buss, services as assistant city engineer	85 62	
David Hinckley, services	79 32	
William M. Duane, services	73 62	
	<hr/>	
<i>Amounts carried forward</i>	<i>\$6,701 35</i>	<i>\$7,600 00</i>
		<hr/>

<i>Amounts brought forward</i> . . .	\$6,701 35	\$7,600 00
George M. Angier, services . . .	61 13	
Frank E. Fuller, services . . .	58 36	
Francis J. Burrage, services . . .	54 64	
Arthur R. Spaulding, services . . .	53 51	
Stephen Childs, services . . .	2 50	
Incidental repairs, travelling ex- penses, etc., of engineer and assistants	236 47	
Buff & Burger, instruments and re- pairs	41 50	
Charles G. Tinkham, keeping horse, etc.	264 69	
P. A. McVicar, painting and repairs on wagon	46 50	
W. H. French & Co., material and labor	23 52	
J. Carroll, material and labor . . .	4 07	
J. W. Conroy & Son, material and labor	2 25	
McCarthy & Nugent, blacksmithing,	10 01	
Charles A. Cole, blacksmithing . . .	5 36	
J. C. Farrar, blacksmithing . . .	1 88	
Charles H. Jenison, expressage . . .	2 00	
Frost & Adams, supplies	18 26	
Library Bureau, supplies	10 50	
Weeks & Potter, supplies	1 52	
Total, as per item No. 7 of expenses . .		\$7,600 02
Amount overdrawn, transferred into excess and deficiency account		\$0 02

City Hall Expenses.

Appropriation		\$2,000 00
Newton & Watertown Gaslight Co.,		
gas	\$647 65	
C. F. Eddy & Co., coal	551 70	
Almshouse Department, wood . .	9 38	
Water Department, use of water .	38 96	
A. D. Lougee, ice	30 00	
J. D. Wellington, sundry cash ex-		
penses	340 11	
Germicide Co., material and labor .	52 00	
H. H. Hunt, material and labor . .	60 30	
F. T. Burgess & Co., material and		
labor	17 95	
Allen & Berry, material and labor .	26 72	
W. H. French & Co., material and		
labor	17 78	
F. H. Humphrey, material and labor,	14 15	
A. F. A. G. Libby, material and		
labor	7 00	
Joseph Zeller, material and labor .	4 80	
C. A. Cole, material and labor . .	60	
J. & J. Dobson, mats, etc. . . .	28 50	
Irving W. Wheeler & Co., flag . .	16 50	
C. H. Jenison, expressage	12 38	
S. A. White, cleaning carpet . . .	10 71	
Cabot Bros., chairs	10 00	
Paine Furniture Co., chairs . . .	8 00	
Newton Odorless Excavating Co.,		
cleaning cesspool	10 00	
<i>Amounts carried forward . . .</i>	<u>\$1,915 19</u>	<u>\$2,000 00</u>

<i>Amounts brought forward .</i>	<i>.\$1,915 19</i>	<i>\$2,000 00</i>
Austin & Fellows, feather dusters .	5 00	
F. H. Smith, repairing clock . .	3 00	
	<hr/>	
Total, as per item No. 8 of expenses .		<i>\$1,923 19</i>
		<hr/>
Balance unexpended, transferred into excess and deficiency account		<i>\$76 81</i>

Fire Department.

Appropriation	\$25,900 00	
Additional appropriation by order of City Council	300 00	
	<hr/>	<i>\$26,200 00</i>
Henry L. Bixby, chief of department,	1,500 00	

STEAMER NO. 1.

F. E. Judkins, engineer .	\$950 00	
George K. Stacy, substitute engineer . .	36 54	
John Deary, driver . .	750 00	
P. E. Ellis, substitute driver, engine . .	28 84	
Frank E. Liddell, driver, hose	349 96	
P. E. Ellis, substitute driver, hose . .	23 08	
H. C. Lindley, stoker .	20 84	
Archibald R. Carley, stoker	29 16	
F. D. Graves, foreman .	64 16	
	<hr/>	
<i>Am'ts carried forw'd .</i>	<i>\$2,252 58</i>	<i>\$1,500 00</i>
		<i>\$26,200 00</i>

<i>Am'ts brought forw'd</i>	\$2,252 58	\$1,500 00	\$26,200 00
C. W. H. Boulton, foreman	45 84		
C. W. H. Boulton, assistant foreman and secretary	61 23		
E. W. Lyons, assistant foreman and hoseman,	102 08		
R. J. Morrisey, hoseman .	95 83		
J. F. Horrigan, hoseman .	100 00		
John McCammon, hoseman	100 00		
Walter Pingree, hoseman .	100 00		
Archibald R. Carley, hoseman	70 84		
P. C. Carroll, hoseman .	37 49		
Frank E. Liddell, hoseman,	25 00		
	—————	\$2,990 89	

STEAMER NO. 2 AND CHEMICAL.

R. S. Cummings, engineer,	\$950 00		
George K. Stacy, substitute engineer . . .	36 54		
Charles L. Berry, driver .	750 00		
P. E. Ellis, substitute driver, engine . . .	28 84		
R. J. Riley, driver, hose .	138 48		
F. D. Lancaster, driver, hose	449 96		
<i>Am'ts carried forw'd</i>	\$2,353 82	\$4,490 89	\$26,200 00

<i>Am'ts brought forw'd</i>	\$2,353 82	\$4,490 89	\$26,200 00
P. E. Ellis, substitute driver, hose . . .	23 08		
George K. Stacy, stoker .	85 40		
George H. Haynes, foreman	110 00		
F. H. Humphrey, assistant foreman and secretary	105 00		
J. Q. A. Hawkes, hoseman,	100 00		
H. W. Nicholl, hoseman .	100 00		
C. M. Kebbe, hoseman .	100 00		
Joseph Commons, hoseman	100 00		
P. E. Ellis, hoseman .	66 66		
	————	\$3,143 96	

STEAMER NO. 3.

A. D. Colby, engineer .	\$950 00		
George K. Stacy, substitute engineer . .	36 54		
A. C. Jewett, driver .	216 35		
J. E. Watson, driver .	706 68		
P. E. Ellis, substitute driver	28 84		
Charles A. Peck, stoker .	100 00		
A. I. English, foreman .	110 00		
S. F. Chadbourne, assistant foreman and secretary,	105 00		
<i>Am'ts carried forw'd</i>	\$2,253 41	\$7,634 85	\$26,200 00

<i>Am'ts brought forw'd</i>	\$2,253 41	\$7,634 85	\$26,200 00
C. B. Garey, hoseman .	100 00		
D. McDonald, hoseman .	100 00		
C. J. Polley, hoseman .	100 00		
C. E. Thompson, hoseman,	62 50		
J. McMahan, hoseman, .	100 00		
W. B. Polley, hoseman .	100 00		
W. Soule, hoseman . .	37 50		
	<hr/>	\$2,853 41	

HOOK AND LADDER NO. 1.

Charles Murphy, driver .	\$750 00
Frank E. Liddell, substitute driver . .	14 42
P. C. Carroll, substitute driver . . .	14 42
W. S. Higgins, foreman .	110 00
F. B. Sisson, assistant foreman and secretary .	105 00
J. H. Williams, ladderman,	100 00
O. Dow, ladderman . .	100 00
T. C. Nickerson, ladderman	100 00
H. J. Williams, ladderman,	100 00
U. H. Dyer, ladderman .	100 00
J. Beal, ladderman . .	100 00
J. Watt, ladderman . .	100 00
J. F. Horrigan, ladderman,	100 00
C. Coleman, ladderman .	100 00

Am'ts carried forw'd . \$1,893 84 \$10,488 26 \$26,200 00

Am'ts brought forw'd . \$1,893 84 \$10,488 26 \$26,200 00
M. McLeod, ladderman . 100 00
 \$1,993 84

HOSE COMPANY NO. 4.

F. A. Dexter, driver . \$426 90
P. E. Ellis, substitute
driver . . . 23 08
E. C. Waterhouse, fore-
man . . . 110 00
A. J. Wandless, assistant
foreman and secretary, 105 00
Daniel Archibald, hose-
man . . . 100 00
J. S. Williams, hoseman . 75 00
J. Willard Cook, hoseman, 70 83
Frank A. Dexter, hoseman, 29 28
F. D. Lancaster, hoseman . 25 00
 \$965 09

HOSE COMPANY NO. 5.

J. F. Washburn, foreman . \$110 00
J. U. Kimball, assistant
foreman and secretary, 105 00
John Frost, hoseman . 100 00
J. M. Taylor, hoseman . 100 00
C. G. Fletcher, hoseman . 100 00
W. C. Spaulding, hoseman, 100 00
 \$615 00

Amounts carried forward . . \$14,062 19 \$26,200 00

Amounts brought forward . \$14,062 19 \$26,200 00

HOSE COMPANY NO. 6.

Bernard Early, foreman .	\$110 00	
H. H. Miles, assistant fore-		
man and secretary .	52 50	
D. J. Corcoran, assistant		
hoseman and secre-		
tary	52 50	
D. J. Corcoran, hoseman .	50 00	
P. E. O'Neil, hoseman .	100 00	
D. J. Cooney, hoseman .	100 00	
T. E. Haley, hoseman .	100 00	
W. H. Ayles, jr., hoseman,	50 00	
	<hr/>	\$615 00

HOSE COMPANY NO. 7.

W. S. Cargill, foreman .	\$110 00	
Harley A. Smith, assistant		
foreman and secretary,	105 00	
J. E. Trowbridge, hoseman,	100 00	
J. T. Thomason, hoseman,	100 00	
G. H. Osborne, hoseman .	100 00	
E. A. Mansfield, hoseman,	100 00	
	<hr/>	\$615 00

Twenty firemen, extra services, July		
4	60 00	

<i>Amounts carried forward .</i>	<hr/>	<hr/>
	\$15,352 19	\$26,200 00

Amounts brought forward . \$15,352 19 \$26 200 00

REPAIRS, SUPPLIES, AND INCIDENTALS.

W. F. Bowler, horses . . .	\$425 00	
E. Ham & Co., horse . . .	225 00	
M. Bunker, services purchasing horses	40 50	
The B. F. Goodrich Co. Akron Rubber Works, hose . . .	1,185 90	
H. W. Crowell, grain . . .	619 80	
C. F. Eddy & Co., grain . . .	459 90	
N. W. Tupper, grain . . .	450 60	
Albert Brackett, grain . . .	450 52	
George E. Johnson, grain . . .	449 66	
E. Smead & Co., grain . . .	220 78	
C. F. Eddy & Co., coal and wood . .	625 86	
Albert Brackett, coal and wood . .	466 13	
C. W. Rand, agent, coal . . .	34 00	
Almshouse Department, wood . .	20 00	
John Dolan, wood	6 00	
J. W. Hill, wood	1 00	
Newton & Watertown Gaslight Co., gas	377 10	
Water Department, use of water . .	84 00	
J. E. Trowbridge, exercising horse, etc.	202 85	
M. Bunker, attendance upon horses .	191 96	
J. C. Farrar, blacksmithing . . .	147 60	
Murray & Farrell, blacksmithing . .	123 47	

Amounts carried forward . \$22,159 82 \$26,200 00

<i>Amounts brought forward .</i>	\$22,159 82	\$26,200 00
W. H. Mague, blacksmithing	94 48	
B. F. Barlow, blacksmithing	85 08	
Thomas Belger, blacksmithing	24 00	
Charles A. Cole, blacksmithing	17 45	
Andrew Peters, blacksmithing	6 10	
P. A. McVicar, blacksmithing	6 00	
J. Pulsifer, blacksmithing	2 00	
Waltham Steam Laundry, laundry work	72 75	
Charles Murphy, laundry work	34 25	
Mrs. Thomas Purcell, laundry work	30 06	
Mrs. Margaret Smith, laundry work,	26 43	
Mrs. Julia Buttrick, laundry work	14 78	
B. McFaden, use of horses	89 25	
Timothy Stuart, use of horses	80 49	
John Joyce, use of horses	48 13	
W. H. Mague, use of horses	32 88	
C. McBride, use of horses	31 50	
Henry Hesse, use of horses	26 25	
T. F. Mague, use of horses	23 63	
Charles Dolan, use of horses,	15 75	
H. H. Miles, use of horses	14 00	
Dennis Leahy, use of horses	10 50	
John Hackett, use of horses	7 00	
Wm. Colton, use of horses	5 25	
J. O. Watson, use of horses	3 50	
Fife's Express, use of horses	3 50	
Thomas Kelleher, use of horses	3 50	
<i>Amounts carried forward .</i>	<hr/> \$22,968 33	<hr/> \$26,200 00

<i>Amounts brought forward .</i>	\$22,968 33	\$26,200 00
S. F. Cate, use of teams . . .	13 00	
S. L. Pratt, use of teams . . .	11 00	
H. A. Spear, use of teams . . .	6 00	
Central Stables, use of teams . . .	3 50	
C. H. Jenison, expressage . . .	19 10	
Eames Express, expressage . . .	2 90	
Fife's Express, expressage . . .	1 25	
P. A. McVicar, material and labor .	55 95	
J. Carroll, material and labor . .	35 69	
F. H. Humphrey, Agent, material and labor	29 75	
D. W. Brownell, material and labor .	16 40	
Wm. Welch, material and labor . .	15 74	
Peter Gray, material and labor . .	15 60	
P. Y. Hoseason, material and labor .	15 25	
E. W. Hodgson, material and labor .	15 05	
H. H. Hunt, material and labor . .	8 96	
Whittier Machine Company, material and labor	4 75	
T. F. Glennan, material and labor . .	4 40	
M. C. Higgins, material and labor . .	3 32	
The Pettee Machine Works, material and labor	3 00	
Tucker Manufacturing Company, material and labor	2 75	
S. O. Thayer & Co, material and labor	2 00	
V. Haffermehl, material and labor . .	2 00	
<i>Amounts carried forward .</i>	<hr/> \$23,255 69	<hr/> \$26,200 00

<i>Amounts brought forward .</i>	\$23,255 69	\$26,200 00
J. F. Washburn, material and labor .	1 80	
Isaac Smith, material and labor .	1 75	
Allen & Barry, material and labor .	1 60	
Edward Pike, material and labor .	1 67	
George Fuller, material and labor .	1 50	
W. Rand, material and labor . .	1 25	
Speare, Gregory & Co., oil . .	12 13	
Alden Speare's Sons & Co., oil .	8 33	
The Prussian Army Oil Manufactur- ing Company, oil	3 75	
J. N. Danforth, horse salve . .	6 00	
R. Stanley, liniment	4 50	
James Saunders, services as hoseman,	33 32	
P. E. Ellis, services as driver . .	2 00	
The Scovill Manuf. Co., buttons, etc.	83 00	
Estate of Geo. S. Trowbridge, four jacks	60 00	
W. H. Wilson, fire hats, etc. . .	40 00	
H. L. Bixby, expenses to Atlanta, Ga.	50 00	
The American Fire Hose Manufac- turing Company, repairing hose,	37 28	
J. Hinman, agent, lanterns, etc. .	29 00	
C. Callahan & Co., play-pipe, etc. .	29 00	
Sherburne & Co., cotton waste .	26 11	
Putnam & Co., mattresses . .	22 00	
Newton Highlands Congregational Society, rebuilding partition in tower of church	20 00	
<i>Amounts carried forward .</i>	<hr/> \$23,731 68	<hr/> \$26,200 00

<i>Amounts brought forward .</i>	\$23,731 68	\$26,200 00
Peck & Whipple Company, whips .	17 40	
Red Line Transit Company, freight .	14 10	
Boston and Albany Railroad Com- pany, freight	1 14	
Leander Barber, brooms	15 13	
Manchester Locomotive Works, blocks	14 00	
Ordway, Kimball & Loring, nickel ring bits	13 75	
A. D. Lougee, ice	7 50	
Howard Bros., ice	5 40	
Geo. H. Ellis, ice	5 00	
H. L. Bixby, sundry cash expenses .	5 00	
Emil Meyers & Co., pomade . . .	5 00	
Bishop & Bro., step-ladder . . .	3 20	
S. O. Thayer & Co., carpet sweeper .	3 00	
Charles Murphy, repairing fire coats,	3 00	
The Newton Odorless Excavating Company, cleaning cesspool .	2 50	
The American Steam Gauge Com- pany, gauge	2 00	
J. F. Washburn, removing snow from hydrants	8 50	
J. L. Randall, removing snow from hydrants	7 88	
W. H. Ayles, jr., removing snow from hydrants	7 00	
H. L. Bixby, removing snow from hydrants	3 50	
<i>Amounts carried forward .</i>	<u>\$23,875 68</u>	<u>\$26,200 00</u>

<i>Amounts brought forward .</i>	\$23,875 68	\$26,200 00
J. O. Watson, removing snow from hydrants	3 50	
P. E. Ellis, removing snow from hydrants	3 50	
H. C. Lindley, removing snow from hydrants	1 75	
C. W. H. Bolton, removing snow from hydrants	1 75	
Walter Pingree, removing snow from hydrants	1 75	
G. K. Stacy, removing snow from hydrants	1 75	
Andrew S. Jackson, supplies . .	68 32	
Page & Coffin, supplies . . .	31 36	
E. E. Rice & Co., supplies . .	25 49	
H. E. Woodberry, supplies . .	22 05	
James Paxton, supplies . . .	20 00	
Arthur Hudson, supplies . . .	10 50	
Barber Brothers, supplies . .	9 03	
Abbott Downing Company, sup- plies	8 45	
I. H. Snow, supplies . . .	8 35	
William H. Wilson, supplies . .	8 00	
J. Hinman, agent, supplies . .	8 00	
C. G. Braxmer, supplies . . .	7 50	
H. W. Wellington, supplies . .	7 17	
George H. Ingraham, supplies . .	6 90	
John J. Noble, supplies . . .	6 03	
<i>Amounts carried forward .</i>	<u>\$24,136 83</u>	<u>\$26,200 00</u>

<i>Amounts brought forward .</i>	\$24,136 83	\$26,200 00
Newton Glaister, supplies . . .	6 00	
Manchester Loco. Works, supplies . .	5 40	
W. C. Gaudelet, supplies . . .	5 35	
Lawrence H. Roach, supplies . . .	4 50	
Alexander Boyd, supplies . . .	3 75	
G. P. Atkins, supplies . . .	3 18	
A. W. Mitchell, supplies . . .	2 94	
D. C. Morgan, supplies . . .	2 75	
Charles Coleman, supplies . . .	2 00	
Parsons, supplies . . .	2 00	
I. R. Stevens, supplies . . .	1 82	
H. M. Darling & Co., supplies . . .	1 60	
C. C. Hoffman & Co., supplies . . .	1 50	
D. W. Brownell, supplies . . .	1 35	
B. F. Houghton, supplies . . .	1 17	
Howland & Churchill, supplies . .	1 00	
J. F. Horrigan, supplies . . .	1 00	
Sundry small bills . . .	11 51	
	<hr/>	
	\$24,195 65	

Fire Alarm Telegraph.

W. B. Randlett, assistant chief and fire-alarm telegraph operator .	\$1,000 00	
W. B. Randlett, sundry cash expenses . . .	9 50	
Edwin Rogers, fire-alarm boxes . . .	640 03	
	<hr/>	
<i>Am'ts carried forw'd .</i>	\$1,649 53	\$24,195 65 \$26,200 00

<i>Am'ts brought forw'd</i>	\$1,649 53	\$24,195 65	\$26,200 00
Brownlee & Co., poles	156 00		
Pevey Brothers, zincs	102 96		
E. E. Rice & Co., vitriol	84 07		
Blue Line Through Freight			
Company, freight	78 00		
Edwin Rogers, supplies	72 72		
Washburn & Moen Manu-			
facturing Co., wire	60 33		
Eastern Electric Cable			
Company, wire	54 16		
Charles A. Cole, material			
and labor	36 30		
T. Stuart, labor, men and			
teams	29 63		
Stephen Holmes, material			
and labor	26 89		
Alfred Fitzpatrick, cross-			
arms	25 00		
Lewis J. Miller, bulletins	24 00		
Boston Electric Time Co.,			
standard time	24 00		
J. C. Farrar, blacksmith-			
ing	13 90		
Charles L. Bly, supplies	9 18		
F. H. Humphrey, agent,			
material and labor	8 89		
J. H. Brunnell & Co., sup-			
plies	7 55		

Am'ts carried forw'd . \$2,463 11 \$24,195 65 \$26,200 00

Funded Debt.

Town of Newton note. Paid to City Institution for Savings, Lowell, note 6 per cent, due Oct. 3, as per item No. 10 of expenses	\$20,000 00
Schoolhouse note (Williams and Eliot). Paid to Lynn Institution for Savings, note 4 per cent, due Jan. 25, as per item No. 11 of expenses	5,150 00
School note (land for High School). Paid to Institution for Savings, Newburyport, note $3\frac{1}{2}$ per cent, due Sept. 30, as per item No. 12 of expenses	5,000 00
School note (addition to High School building). Paid to Five Cents Savings Bank, Salem, note $3\frac{1}{2}$ per cent, due Oct. 6, as per item No. 13 of expenses	4,500 00
Newton Free Library note (enlargement of library building). Paid to Five Cents Savings Bank, Salem, note $3\frac{1}{2}$ per cent, due Oct. 4, as per item No. 14 of expenses	4,600 00

Highways, Curbing.

Appropriation	\$1,500 00	
Additional appropriation, by order of City Council	500 00	
	<hr/>	\$2,000 00
Noah Prescott, curbstone	\$973 91	
John A. Kenrick, treasurer, labor; men, and teams, Highway Department	607 54	
	<hr/>	
<i>Amounts carried forward</i>	\$1,581 45	\$2,000 00

<i>Amounts brought forward .</i>	\$1,581 45	\$2,000 00
Boston and Albany R.R., freight .	292 37	
J. C. Farrar, blacksmithing . .	8 93	
	<hr/>	
Total, as per item No. 15 of expenses .		1,882 75
		<hr/>
Balance unexpended, transferred into excess and deficiency account		\$117 25

Drains and Culverts.

Appropriation	\$12,000 00	
Transferred to appropriation for high- ways, — general repairs . .	1,500 00	
	<hr/>	\$10,500 00
John A. Kenrick, treasurer, labor, men, and teams, Highway De- partment	\$6,236 14	
F. E. Hamblin, drain pipe, etc. .	2,000 13	
Fiske, Coleman, & Co., drain pipe, etc.	187 00	
M. W. Sands, brick	453 25	
H. W. Clapp & Co., sewer caps, etc.,	75 94	
Noah Prescott, stone	106 50	
David Jackson, stone	96 25	
New York and New England R.R., freight	56 00	
Boston and Albany R.R., freight .	48 26	
Atherton Rubber Co., rubber boots .	52 56	
Walworth Manuf'g Co., valves .	23 40	
W. H. Mague, pumping catch-basin .	20 00	
	<hr/>	
<i>Amounts carried forward .</i>	<i>\$.9,355 43</i>	<i>\$10,500 00</i>

<i>Amounts brought forward .</i>	\$9,355 43	\$10,500 00
Peter C. Baker, material and labor .	169 32	
Pettie Machine Works, material and labor	161 88	
Stephen Holmes, material and labor,	152 14	
Isaac Smith, material and labor .	71 25	
Newton and Watertown Gas Light Company, material and labor .	17 30	
W. Rand, material and labor . .	14 00	
G. W. & F. Smith Iron Works, material and labor	13 99	
William Petigrew, material and labor	8 03	
W. L. Smith, material and labor .	7 12	
Samuel D. Garey, material and labor,	6 87	
A. J. Fiske & Co., material and labor,	6 10	
Chelmsford Foundry Company, grates, etc.	40 00	
A. Harris, labor, men, and teams .	25 00	
A. S. Morss, spikes	9 50	
Maverick Oil Company, oil . .	10 27	
H. A. Spear, use of teams . .	6 00	
S. F. Cate, use of teams . . .	4 00	
Myles J. Joyce, labor	3 50	
C. H. Hurd, expressage	1 50	
Fife's Express, expressage . .	35	
C. H. Jenison, expressage . .	25	
John W. Scott, blacksmithing . .	38 53	
Murray & Farrell, blacksmithing .	8 02	
<i>Amounts carried forward .</i>	\$10,130 35	\$10,500 00

<i>Amounts brought forward .</i>	\$10,130 35	\$10,500 00
Charles A. Cole, blacksmithing .	4 22	
B. F. Barlow, blacksmithing .	3 85	
J. C. Farrar, blacksmithing .	2 20	
Thomas Belger, blacksmithing .	2 10	
P. A. McVicar, blacksmithing .	1 60	
T. W. Mullen, blacksmithing .	1 30	
Andrew Peters, blacksmithing .	30	
J. L. Mott Iron Works, supplies .	10 00	
Cobb, Bates, & Yerxa, supplies .	5 50	
Barber Brothers, supplies .	3 84	
O. F. Lucas, supplies .	2 87	
Rockwell & Moseley, supplies .	1 75	
O. B. Leavitt, supplies .	60	
Albert Brackett, supplies .	50	
<hr/>		
Total, as per item No. 16 of expenses .		\$10,170 98
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Balance unexpended, transferred into excess and deficiency account		\$329 02

Highways, General Repairs.

Appropriation	\$60,000 00
Additional appropriation by order of City Council	500 00
Transferred from appropriation for drains and culverts, by order of City Council	1,500 00
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<i>Amount carried forward .</i>	\$62,000 00

<i>Amount brought forward</i>	\$62,000 00	
Transferred from city treasury, cash received from sundry persons for material and labor furnished by Highway Department, by order of City Council	660 10	\$62,660 10
William E. Fuller, services as super- intendent of streets	\$1,500 00	
John J. Ware, assistant superinten- dent of streets	939 00	
John A. Peck, assistant superinten- dent of streets	948 00	
George E. Stuart, assistant superin- tendent of streets	1,044 88	
Samuel M. Jackson, assistant super- intendent of streets	54 00	
John A. Kenrick, treasurer, amount paid laborers on discharge tickets	1,099 71	
John A. Kenrick, treasurer, amount paid laborers on highways, as per pay-rolls	41,796 17	
John J. Ware, use of horse and car- riage	200 00	
John A. Peck, use of horse and car- riage	200 00	
W. H. Thompson, horses	1,600 00	
George H. Sampson, steam rock-drill, etc.	623 11	
<i>Amounts carried forward</i>	\$50,004 87	\$62,660 10

<i>Amounts brought forward</i> .	\$50,004 87	\$62,660 10
H. M. Darling & Co., tools, etc. .	505 26	
Bradlee, Hastings & Co., tools, etc. .	55 50	
Dodge, Haley & Co., tools, etc. .	23 68	
J. Breck & Sons, tools, etc. . .	22 25	
George A. Goodyer, powder, etc. .	406 00	
Rockwell & Moseley, powder . .	12 25	
Noah Prescott, stone . . .	307 16	
George F. Freiermuth, paving stone,	97 00	
John Lyons, paving stone . .	3 00	
H. Gore & Co., paving stone . .	1 80	
Dennis Leahey, watering cart . .	200 00	
J. R. McLaughlin, care of sick horses,	162 00	
M. Bunker, care of sick horses . .	10 50	
Howland & Churchill, lanterns and globes	143 30	
Boston & Albany R.R., freight .	124 99	
Water Department, use of water .	111 43	
James Forgie & Son, blankets . .	86 75	
George F. Works, chestnut posts .	75 62	
Newton & Watertown Gaslight Co., gas	66 75	
Farrell Foundry and Machine Co., new wheels, etc.	60 47	
Caleb Craft's heirs, gravel . .	46 35	
Lidgerwood Manufacturing Co., smoke-stack, grate, etc. . .	38 00	
A. W. Snow, hose, etc. . . .	32 72	
Jenkins Bros., cotton waste . .	31 60	
<i>Amounts carried forward</i> . .	\$52,629 25	\$62,660 10

<i>Amounts brought forward .</i>	\$52,629 25	\$62,660 10
W. H. Bustin, horse collars	29 50	
C. G. Estes, brooms	27 50	
Leander Barber, Jr., brooms	5 00	
W. H. Thompson, pasturing horse . .	21 00	
Dr. F. L. Thayer, medical attendance		
John Carroll	20 00	
M. Frank Lucas, lumber and stakes .	17 42	
Bagnall & Loud Block Co., blocks . .	16 80	
G. Fuller & Son, lumber	16 66	
William Kent, expenses to New York,	14 00	
J. N. Danforth, horse salve	13 00	
Davis & Farnum Manufacturing Co.,		
castings	10 96	
James Hennessey, sand screen	7 00	
W. H. French & Co., hose	6 00	
F. Jones, use of sled	5 00	
R. Stanley, horse liniment	4 50	
Timothy Stuart, carting stone, etc. .	4 20	
J. Q. Harrington, filing saws	2 75	
Edward Kendall & Son, examining		
engine	2 20	
H. W. Crowell, grain	630 49	
Albert Brackett, grain	519 21	
C. F. Eddy & Co., grain	361 10	
George E. Johnson, grain	322 07	
N. W. Tupper, grain	299 29	
E. Smead & Co., grain	181 45	
Almshouse Department, hay	328 61	
<i>Amounts carried forward .</i>	\$55,494 96	\$62,660 10

<i>Amounts brought forward .</i>	55,494 96	\$62,660 10
N. B. Douglas, hay	317 42	
David Hall, hay	314 93	
George M. Coolidge, hay . . .	266 79	
Elihu G. Loomis, hay	183 18	
H. D. Parmenter, hay	172 49	
H. B. Braman, hay	108 75	
William Dix, hay	68 49	
C. F. Eddy & Co., hay	65 79	
William Walsh, hay	64 93	
James Nicholson, hay	55 72	
W. J. Towne, hay	53 57	
N. W. Tupper, hay	43 82	
Conrad Decker, hay	23 86	
George E. Johnson, hay	22 10	
H. W. Crowell, hay	20 72	
William Stearns, hay	19 29	
Samuel M. Jackson, hay	17 87	
N. W. Tupper, straw, etc. . . .	139 92	
C. F. Eddy & Co., straw, etc. . .	135 52	
H. W. Crowell, straw, etc. . . .	74 52	
Albert Brackett, straw, etc. . .	66 51	
J. Stearns, straw, etc. . . .	42 83	
George E. Johnson, straw, etc.. .	20 66	
Murray & Farrell, blacksmithing .	713 37	
Thomas Belger, blacksmithing . .	621 55	
J. C. Farrar, blacksmithing . . .	567 73	
Andrew Peters, blacksmithing . .	252 16	
John W. Scott, blacksmithing . .	174 90	
<i>Amounts carried forward .</i>	\$60,124 35	\$62,660 10

<i>Amounts brought forward</i> .	\$60,124 35	\$62,660 10
B. F. Barlow, blacksmithing . .	152 95	
A. Danforth, agent, blacksmithing .	147 54	
P. A. McVicar, blacksmithing . .	134 35	
Charles A. Cole, blacksmithing . .	98 69	
J. Pulcifer, blacksmithing . .	80 25	
D. J. O'Donnell, blacksmithing . .	54 00	
W. H. Mague, blacksmithing . .	32 46	
T. W. Mullen, blacksmithing . .	22 54	
S. D. Keegan, blacksmithing . .	13 25	
McCarthy & Nugent, blacksmithing,	8 30	
Albert Brackett, coal and wood . .	367 73	
Cousens Brothers, coal	254 85	
Joel F. Sheppard & Sons, coal and wood	41 58	
J. W. Mitchell, coal and wood . .	39 75	
George Warren & Co., coal and wood	21 50	
C. F. Eddy & Co., coal and wood . .	7 60	
Geo. O. Kingsbury, wood	7 00	
Vacuum Oil Company, oil	78 25	
Maverick Oil Company, oil	29 70	
Merriam & Morgan Paraffine Co., oil	12 72	
Butcher's Slaughtering and Melting Association, oil	11 50	
Nonantum Worsted Company, oil . .	3 25	
Wm. Winslow, axle grease	6 48	
Crew, Levick and Winslow, axle grease	3 12	
Stephen F. Cate, use of teams . .	66 00	
<i>Amounts carried forward</i> .	\$61,819 71	\$62,660 10

<i>Amounts brought forward .</i>	\$61,819 71	\$62,660 10
H. A. Spear, use of teams	6 50	
Daniels' Nonantum Stables, use of teams	6 25	
Saml. M. Jackson, labor, men and teams	28 50	
Jenison's Express, expressage	21 85	
Hurd's Express, expressage	12 00	
E. A. Jones, expressage	5 05	
Fife's Express, expressage	1 85	
Eames' Express, expressage	1 65	
J. Carroll, material and labor	212 69	
Higgins & Nickerson, material and labor	179 33	
J. O. Evans' Sons, material and labor	161 10	
R. J. Morrissey, material and labor	127 71	
Wm. Petigrew, material and labor	119 00	
T. F. Glennan, material and labor	118 25	
Isaac Smith, material and labor	101 75	
D. W. Brownell, material and labor,	74 30	
W. L. Smith, material and labor	64 02	
E. W. Hodgson, material and labor	45 70	
P. Y. Hoseason, material and labor	37 90	
D. W. Eagles, material and labor	35 00	
R. J. Gilfeather, material and labor	33 45	
H. L. White, material and labor	30 75	
S. D. Garey, material and labor	28 96	
Russell Freeman, material and labor,	28 91	
Walworth Manufacturing Company, material and labor	26 23	
<i>Amounts carried forward .</i>	<u>\$63,328 42</u>	<u>\$62,660 10</u>

<i>Amounts brought forward .</i>	\$63,328 42	\$62,660 10
P. C. Baker, material and labor .	21 84	
Adam Beck, material and labor .	18 34	
George S. Noden, material and labor .	16 50	
J. W. Conroy & Son, material and labor	16 00	
H. H. Hunt, material and labor .	12 08	
Farrell Foundry & Machine Company, material and labor . .	11 30	
Pettee Machine Works, material and labor	10 29	
James Ford, material and labor .	9 55	
L. H. Cranitch, material and labor .	8 75	
Willard Rand, material and labor .	5 50	
H. F. Ross, material and labor .	4 00	
George Fuller, material and labor .	3 11	
J. F. Horrigan, material and labor .	2 00	
W. H. French & Co., material and labor	1 95	
L. A. Gammans, material and labor .	1 85	
M. C. Higgins, material and labor .	1 77	
Wm. Johnson, material and labor .	1 70	
W. C. Oastler, supplies	39 75	
Barber Bros., supplies	36 26	
S. O. Thayer & Co., supplies . .	30 00	
Walworth Manuf. Co., supplies .	29 33	
B. F. Houghton, supplies . . .	24 34	
W. O. Knapp & Co., supplies . .	19 77	
Geo. H. Ingraham, supplies . .	18 52	
<i>Amounts carried forward .</i>	\$63,672 92	\$62,660 10

<i>Amounts brought forward .</i>	\$63,672 92	\$62,660 10
G. P. Atkins, supplies . . .	17 65	
Cobb, Bates, & Yerxa, supplies .	16 50	
Sewall & Day Cordage Co., supplies,	14 27	
Wm. Jessop & Sons, supplies . .	13 80	
J. E. Trowbridge, supplies . .	11 95	
Geo. Mathews & Co., supplies . .	11 25	
A. W. Snow, supplies . . .	9 85	
Hill & Langtry, supplies . . .	6 12	
H. B. Coffin, supplies . . .	9 22	
H. W. Fanning & Son, supplies .	7 57	
Thomas Hollis, supplies . . .	7 00	
Hubbard & Proctor, supplies . ⁴ .	6 10	
C. W. Sabin, supplies . . .	6 00	
O. B. Leavitt, supplies . . .	5 98	
A. A. Savage, supplies . . .	5 75	
Thomas B. Adams & Co., supplies .	5 50	
Isaac H. Snow, supplies . . .	4 35	
Bagnall & Loud Block Co., supplies,	4 30	
Eben Smith, supplies . . .	4 00	
J. H. Sheridan, supplies . . .	3 98	
F. W. Freeman, supplies . . .	3 50	
Alonzo Whitney, supplies . . .	3 35	
J. W. Davis & Co., supplies . .	3 08	
H. A. Sherman, supplies . . .	2 71	
Ames Plow Company, supplies .	2 60	
J. J. Noble, supplies . . .	2 25	
Greenwood & Co., supplies . .	2 20	
W. H. Gallison, supplies . . .	2 00	
<i>Amounts carried forward .</i>	<hr/> \$63,865 75	<hr/> \$62,660 10

<i>Amounts brought forward .</i>	\$63,865 75	\$62,660 10
M. Frank Lucas, supplies . . .	1 75	
Haggarty Bros., supplies . . .	1 65	
F. C. Morgan, supplies . . .	1 60	
C. F. Eddy & Co., supplies . . .	1 50	
O. F. Lucas, supplies . . .	1 12	
W. P. Holden, supplies . . .	1 20	
James Paxton, supplies . . .	1 00	
B. Billings, supplies . . .	1 00	
Sundry small bills . . .	7 62	

Total, as per item No. 17 of expenses .		\$63,884 19
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Amount overdrawn, transferred into excess and deficiency account		\$1,224 09
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Gravel Land.

Appropriation	\$3,000 00
Michael Lester, gravel land on Pine Street	\$2,564 00
Frank J. Wetherell, gravel . . .	156 50
Hannah B. Edmands, gravel . . .	102 55
C. S. Pulsifer, gravel . . .	52 30
F. E. Hamblin, sand . . .	36 75
Patrick Shea, gravel.	25 40
Caleb Craft's heirs, gravel . . .	22 80
P. A. Murray, gravel . . .	20 00
J. M. Viles, gravel . . .	8 00
Daniel Warren, sand . . .	7 20
Moses Adams, gravel . . .	4 50

Total, as per item No. 18 of expenses .		\$3,000 00
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Land Damages.

Appropriation	\$1,000 00
Moses G. Crane for contribution on account of new street from Lake Avenue to Newton Highlands Station	\$500 00
Daniel Hickey, for land on Lexington Street	16 00
	<hr/>
Total, as per item No. 19 of expenses .	516 00
	<hr/>
Balance unexpended, transferred into excess and deficiency account	\$484 00

Removal of Ashes.

Appropriation	\$4,000 00
John A. Kenrick, Treasurer, labor, men, and teams, Highway De- partment	\$3,213 50
A. Danforth, agent, blacksmithing .	55 55
B. F. Barlow, blacksmithing . .	4 00
Andrew Peters, blacksmithing . .	77
C. A. Cole, blacksmithing . .	75
E. W. Hodgson, material and labor .	12 00
James Forgie & Son, blankets . .	7 00
Daniels' Nonantum Stables, use of team	25
	<hr/>
Total, as per item No. 20 of expenses .	\$3,293 82
	<hr/>
Balance unexpended, transferred into excess and deficiency account	\$706 18

Sidewalks and Street Crossings.

Appropriation	\$11,000 00	
Additional appropriation by order of City Council	3,300 00	\$14,300 00
<hr/>		
John A. Kenrick, Treasurer, labor, men, and teams, Highway De- partment	\$5,655 26	
Simpson Brothers, concreting . .	7,498 91	
Noah Prescott, curbstone . . .	287 30	
John Burke, sods	180 78	
Timothy Stuart, sods	121 40	
Boston and Albany R.R., freight .	64 33	
M. W. Sands, brick	35 00	
Samuel D. Garey, material and labor,	79 76	
Russell Freeman, material and labor,	35 00	
R. J. Morrissey, material and labor .	31 32	
John W. Scott, blacksmithing . .	24 65	
J. C. Farrar, blacksmithing . . .	6 30	
Murray & Farrell, blacksmithing .	2 90	
Charles A. Cole, blacksmithing . .	1 30	
W. L. Smith, material and labor . .	6 88	
Barber Brothers, supplies	2 83	
S. O. Thayer & Co., supplies . . .	1 00	
Sundry small bills	2 35	
<hr/>		
Total, as per item No. 21 of expenses .	\$14,037 27	
<hr/>		
Balance unexpended, transferred into excess and deficiency account	\$262 73	

Highways, Widening, Reconstruction, and Improvements.

Appropriation	\$20,000 00	
Additional appropriation, by order of City Council	2,000 00	
	<hr/>	\$22,000 00
John A. Kenrick, Treasurer, amount paid for labor, men, and teams, as per pay-rolls	\$20,069 04	
Timothy Stuart, gravel, etc.	252 00	
P. A. Murray, stone	154 50	
John Burke, sods	70 18	
George A. Goodyear, powder, etc.	36 00	
Albert Brackett, coal, wood, etc.	32 18	
C. F. Eddy & Co., coal, wood, etc.	29 59	
Maverick Oil Company, oil	11 94	
Alfred Fitzpatrick, lumber, etc.	8 31	
Daniels' Nonantum Stables, use of teams	1 25	
William Petigrew, material and labor	155 33	
H. H. Hunt, material and labor	120 06	
H. F. Wellington, material and labor,	17 05	
H. L. White, material and labor	4 50	
Higgins & Nickerson, material and labor	3 70	
W. L. Smith, material and labor	2 32	
Murray & Farrell, blacksmithing	115 59	
John W. Scott, blacksmithing	77 60	
J. C. Farrar, blacksmithing	74 29	
	<hr/>	
<i>Amounts carried forward</i>	\$21,235 43	\$22,000 00

<i>Amounts brought forward .</i>	\$21,235 43	\$22,000 00
Charles A. Cole, blacksmithing .	36 45	
Thomas Belger, blacksmithing .	35 35	
P. A. McVicar, blacksmithing .	10 31	
S. D. Keegan, blacksmithing .	10 00	
W. H. Mague, blacksmithing .	5 00	
T. W. Mullen, blacksmithing .	3 45	
Cobb, Bates, & Yerxa, supplies .	16 50	
B. F. Houghton, supplies .	2 95	
W. O. Knapp & Co., supplies .	1 75	
Barber Brothers, supplies .	1 42	
S. O. Thayer & Co., supplies .	1 15	
Sundry small bills	4 55	

Total, as per item No. 22 of expenses .	\$21,364 31
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Balance unexpended, transferred into excess and deficiency account	\$635 69
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Interest on City Loans, Permanent.

Appropriation	\$20,545 00	
Transferred from appropriation for interest on water bonds by order City Council	1 46	
	<hr/>	\$20,546 46
Commonwealth of Massachusetts,	\$10,610 00	
National Bank of the Commonwealth,	4,460 00	
City Institution for Savings, Lowell,	1,200 00	
Salem Five Cents Savings Bank .	805 00	
Brewster, Cobb, & Esterbrook .	787 50	
	<hr/>	
<i>Amounts carried forward .</i>	\$17,862 50	\$20,546 46

<i>Amounts brought forward</i> .	\$17,862 50	\$20,546 46
Lynn Institution for Savings . . .	593 75	
Estate of John Brewster . . .	551 25	
Winchester Savings Bank . . .	412 00	
Cape Ann Savings Bank . . .	412 00	
Institution for Savings, Newburyport,	351 46	
Commissioners of the sinking funds		
of the City of Newton . . .	206 00	
William Beals	78 75	
Sinking fund commissioners of		
Taunton	78 75	
<hr/>		
Total, as per item No. 23 of expenses .		\$20,546 46

Interest on City Loans, Temporary.

Appropriation	\$8,250 00	
Transferred from appropriation for		
water bonds by order City		
Council	358 54	
Transferred from City treasury, por-		
tion of premium from sale of		
water bonds by order City		
Council	55 65	
<hr/>		\$8,664 19
Commonwealth of Massachusetts .	\$3,566 52	
Trustees of the Read Fund . . .	1,588 00	
Mechanics Savings Bank, Lowell .	937 50	
Salem Five Cents Savings Bank .	581 25	
National Bank of Redemption . .	422 20	
<hr/>		
<i>Amounts carried forward</i> .	\$7,095 47	\$8,664 19

<i>Amounts brought forward . . .</i>	<i>.\$7,095 47</i>	<i>\$8,664 19</i>
New England Trust Co. . . .	416 67	
Brewster, Cobb, & Esterbrook . . .	385 42	
Potter Lovell Company	291 67	
Commissioners of the sinking funds of the City of Newton	160 00	
Nantucket Institution for Savings . .	147 50	
Clarence A. Dorr	41 67	
Uninvested portion of Kenrick Fund, .	125 79	
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Total, as per item No. 24 of expenses . .		\$8,664 19

Interest on Water Bonds.

Appropriation	\$56,100 00	
Transferred to interest on city loans, temporary,	\$358 54	
Transferred to interest on city loans, permanent,	1 46	
<hr/>		
	\$360 00	
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		\$55,740 00
Jan. 1, National Bank of the Com- monwealth	\$24,250 00	
March 28, National Bank of the Commonwealth	3,620 00	
June 20, National Bank of the Com- monwealth	24,250 00	
Sept. 26, National Bank of the Com- monwealth	3,620 00	
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Total, as per item No. 25 of expenses . .		\$55,740 00

Indigent Soldiers and Sailors.

Appropriation	\$1,000 00
Samuel G. Toothachre . . . \$120 00	
Samuel Wallis 120 00	
Samuel Franklin 96 00	
James H. Lockley 96 00	
John Sexton 96 00	
Albert P. Bugbee 96 00	
John Taffe 80 00	
John F. Franklin 48 00	
Jefferson Thomas 48 00	
Patrick Carrigan 48 00	
Mary Sullivan 5 00	
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Total, as per item No. 26 of expenses .	853 00
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Balance unexpended, transferred into excess and deficiency account	\$147 00

Memorial Day.

Appropriation	\$400 00
Charles Ward Post No. 62 G.A.R., as per item No. 28 of expenses	400 00

Miscellaneous Expenses.

Appropriation	\$7,500 00
Additional appropriation by order City Council	8,000 00
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	\$15,500 00
Grace E. Newell, settlement of claim, \$3,067 98	
Thomas C. Parks, settlement of claim, 574 14	
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<i>Amounts carried forward .</i>	\$3,642 12 \$15,500 00

<i>Amounts brought forward .</i>	\$3,642 12	\$15,500 00
Mrs. Pinkham, settlement of claim .	500 00	
Elizabeth C. Rogers, settlement of claim	300 00	
Jacob Faulkner, settlement of claim,	100 00	
Ann Eliza Barstow, executrix, settle- ment of claim	88 93	
Charles C. Harrington, settlement of claim	55 00	
J. Q. Henry, <i>et al.</i> , settlement of claim,	50 00	
Michael Sheehan, settlement of claim,	50 00	
R. B. Risk, superintendent, settle- ment of claim	44 76	
Morris Grey, settlement of claim .	8 60	
W. S. Slocum, city solicitor, for legal expenses	200 00	
Samuel D. Garey, plank sidewalk, Hammond Street	568 00	
Edwin Rogers, fire-alarm striker, etc.,	640 00	
William Blake & Co., bell and frame,	455 97	
Stephen Holmes, work on bell tower,	435 50	
Water Department, use of water, watering-troughs	533 16	
Water Department, use of water, drinking posts	120 00	
Newton Athenæum, aid for reading- room	500 00	
Newton Centre Associates, aid for reading-room	250 00	
<i>Amounts carried forward .</i>	<hr/> \$8,542 04	<hr/> \$15,500 00

<i>Amounts brought forward .</i>	<i>.\$8,542 04</i>	<i>\$15,500 00</i>
New-England Telephone and Telegraph Company, rental of instruments and service	588 46	
M. C. Laffie, serving warrants, etc. .	902 50	
Rodney M. Lucas, serving warrants, etc.	179 59	
American Bank Note Company, alteration of bond plate, etc. . .	350 00	
"Newton Journal," advertising, printing, etc.	360 14	
"Newton Graphic," advertising, printing, etc.	189 63	
Rand Avery Company, printing, etc.,	278 65	
Newton Mills, abatement of taxes .	240 10	
George E. Bridges, services, collecting facts of births	247 00	
George E. Bridges, services, registrar of voters	150 00	
Isaac F. Kingsbury, services, registrar of voters	150 00	
Richard T. Sullivan, services, registrar of voters	150 00	
George H. Bourne, services, registrar of voters	150 00	
John A. Kenrick, Treasurer, on account Highway Department, grading for plank sidewalk, Hammond Street	\$186 37	
<i>Amounts carried forward .</i>	<i>\$12,664 48</i>	<i>\$15,500 00</i>

<i>Amounts brought forward</i> .	\$12,664 48	\$15,500 00
National Electric Protector Co., protectors	160 00	
Kern & McLoud, abstract of deed for assessors	143 20	
E. D. Brooks, trimming trees	127 00	
Drew, Allis & Co., advertising in Newton Directory	120 00	
Crowley & Maxwell, costs in Belger suit	91 89	
Stephen F. Cate <i>et al.</i> , making returns of deaths	68 75	
W. M. Belcher & Co., typewriter	60 00	
U. Holzer, ballot-boxes	51 00	
George D. Burrage, stamped envelopes, etc.	87 60	
Charles H. Stacy, stamped envelopes, etc.	26 62	
Francis Murdock, insurance premium	45 00	
Boston Safe Deposit and Trust Co., rental of box	40 00	
The Automatic Bank Punch Co., for punch	36 00	
The Standard Cancelling Ballot-box Co., for repairing boxes	34 38	
Lawrence, Wilde & Co., chairs	30 50	
Newton Centre Associates, use of hall	25 00	
<i>Amounts carried forward</i> .	\$13,811 42	\$15,500 00

<i>Amounts brought forward .</i>	\$13,811 42	\$15,500 00
Newton Associates, use of hall	25 00	
C. W. Turner, use of hall	20 00	
D. W. Farquhar, Treasurer, use of hall	5 00	
Adams Express Co., expressage	22 00	
C. H. Jenison, expressage	12 60	
Albert F. Noyes, expenses on account sewerage	176 25	
John A. Kenrick, incidental expenses in Treasury Department	105 25	
B. F. Otis, incidental expenses in Auditor's Department	104 51	
I. F. Kingsbury, incidental expenses in City Clerk's Department	42 78	
E. W. Redpath, on account of Street Light Committee	38 40	
Albert S. Glover, incidental expenses in Water Department	33 00	
J. D. Wellington, incidental expenses in Messenger Department	12 69	
J. W. Shepard, clerical services in Auditor's Department	100 00	
T. A. Fleu, clerical services in Audi- tor's Department	68 00	
Nellie M. Heywood, clerical services in Auditor's Department	32 00	
John C. Brimblecom, clerical services in Treasurer's Department, etc.	65 00	
<i>Amounts carried forward .</i>	<hr/> \$14,673 90	<hr/> \$15,500 00

<i>Amounts brought forward</i>	\$14,673 90	\$15,500 00
C. M. Jordan, clerical services in Treasurer's Department	32 00	
Nellie M. Heywood, clerical services in Treasurer's Department	22 00	
W. S. French, clerical services in Treasurer's Department	11 00	
J. A. Baylies, clerical services in Water Department	17 70	
Stephen F. Cate, use of teams	163 75	
Daniels' Nonantum Stables, use of teams	115 75	
Central Stables, use of teams	89 75	
Samuel M. Jackson, use of team in assessing taxes	80 00	
W. H. Mague, use of teams	12 75	
Robert Weir, use of teams	8 00	
John Purcell, use of teams	8 00	
Johnson & Keyes, use of teams	6 60	
S. P. Whitman, agent, use of teams	6 00	
C. G. Tinkham, use of teams	4 00	
Samuel L. Pratt, use of teams	2 50	
John T. Hill, use of teams	2 00	
A. F. Harrington, use of teams	1 50	
Fuller, Holtzer & Co., extension bells,	9 00	
G. M. Geyer, moving shed	5 00	
O. B. Leavitt, use of stove	5 00	
Patrick Collins, watching fire	2 00	
Fanning Printing Co., printing	6 57	
<i>Amounts carried forward</i>	\$15,284 77	\$15,500 00

<i>Amounts brought forward .</i>	\$15,284 77	\$15,500 00
George M. Bridges, printing Yes and No ballots	6 00	
J. D. Wellington, ringing bell . . .	6 00	
B. S. Wetherbee, ringing bell . . .	6 00	
George W. Chamberlain, ringing bell,	6 00	
J. T. Thomason, ringing bell . . .	6 00	
F. B. Sisson, ringing bell	6 00	
J. H. Boit, ringing bell	6 00	
J. C. Newcomb, ringing bell	6 00	
Fred Hamilton, ringing bell	3 00	
Thomas Woodman, ringing bell	3 00	
William Love, ringing bell	3 00	
Thomas G. Woodman, ringing bell . . .	3 00	
Henry H. Hunt, material and labor .	63 65	
J. L. Sears, material and labor	40 00	
J. C. Farrar, material and labor . . .	20 06	
W. J. Henderson, material and labor,	16 85	
J. A. Nevins, material and labor . . .	5 00	
J. W. Conroy & Son, material and labor	5 00	
Chas. A. Cole, material and labor . . .	3 60	
J. L. Randall, material and labor . . .	3 50	
A. Danforth, agent, material and labor	1 00	
Dr. J. F. Frisbee, services Newell suit	10 00	
"Boston Daily Advertiser," advertis- ing	8 50	
J. R. Atwood, use of hack	5 00	
<i>Amounts carried forward .</i>	\$15,526 93	\$15,500 00

<i>Amounts brought forward</i>	\$15,526 93	\$15,500 00
Commonwealth of Massachusetts, one quarter fees of druggists' li- censes	4 25	
Clerk of Courts, Middlesex County, costs in suits	3 90	
Mrs. W. G. Wells, rent of hall .	3 00	
Dr. W. H. McOwen, making return of births	3 00	
H. M. Walton, expense for team .	3 00	
J. W. Ghant, labor on ballot-boxes .	2 50	
Bishop & Bro., ladder	2 00	
Newton Post Office, rent of box .	2 00	
John Dolan, use of hall	2 00	
H. C. Dimond & Co., repairing stamp	1 75	
Joseph Lee, supplies	61 00	
James Paxton, supplies	52 00	
R. Q. Barlow, supplies	36 56	
Edwin Fewkes & Son, supplies .	27 30	
American Electric Works, supplies .	27 30	
J. H. Brunnell & Co., supplies .	12 00	
Pevey Bros., supplies	7 40	
Saml. Ward Company, supplies .	7 40	
Chas. L. Bly, supplies	7 20	
H. C. Wood, supplies	7 00	
Barber Bros., supplies	4 01	
R. O. Evans, services as warden, Ward 1	10 00	
Edwin O. Smallwood, services as deputy warden, Ward 1	6 00	
<i>Amounts carried forward</i>	\$15,819 50	\$15,500 00

<i>Amounts brought forward</i>	\$15,819 50	\$15,500 00
Seth C. Stevens, services as clerk, Ward 1	10 00	
George R. Aston, services as deputy clerk, Ward 1	8 00	
Fred H. Stone, services as inspector, Ward 1	10 00	
Edwin O. Childs, services as in- spector, Ward 1	6 00	
A. P. Bugbee, services as deputy inspector, Ward 1	8 00	
Chas. H. Stuart, services as deputy inspector, Ward 1	8 00	
Henry P. Dearborn, services as ward- en, Ward 2	10 00	
John F. Payne, services as deputy warden, Ward 2	6 00	
Willard S. Higgins, services as clerk, Ward 2	10 00	
Alfred B. Tainter, services as deputy clerk, Ward 2	8 00	
Lawrence H. Cranitch, services as inspector, Ward 2	10 00	
James D. Billings, services as in- spector, Ward 2	10 00	
John H. Williams, services as deputy inspector, Ward 2	6 00	
George K. Littlefield, services as deputy inspector, Ward 2	8 00	
<i>Amounts carried forward</i>	\$15,937 50	\$15,500 00

<i>Amounts brought forward .</i>	\$15,937 50	\$15,500 00
Harvey C. Wood, services as warden, Ward 3	10 00	
Frank E. Hunter, services as deputy warden, Ward 3	6 00	
Edward S. Merchant, services as clerk, Ward 3	10 00	
Milo F. Hargedon, service as deputy clerk, Ward 3	6 00	
Arthur R. Coe, services as inspector, Ward 3	10 00	
Chas. F. Tuttle, service as inspector, Ward 3	10 00	
Edward L. Lemon, services as dep- uty inspector, Ward 3	6 00	
Frank H. Humphrey, services as dep- uty inspector, Ward 3	6 00	
George E. Johnson, services as warden, Ward 4	10 00	
Bernard Early, services as deputy warden, Ward 4	6 00	
Henry H. Mather, services as clerk, Ward 4	10 00	
G. Lyman Snow, services as deputy clerk, Ward 4	6 00	
Henry Washburn, services as in- specter, Ward 4	10 00	
Geo. W. Chamberlain, services as in- specter, Ward 4	10 00	
<i>Amounts carried forward .</i>	<hr/> \$16,053 50	<hr/> \$15,500 00

<i>Amounts brought forward .</i>	\$16,053 50	\$15,500 00
Wm. A. Leonard, services as deputy inspector, Ward 4	6 00	
Benj. B. Clark, services as deputy inspector, Ward 4	6 00	
Albert J. Grover, services as warden, Ward 5	10 00	
John W. Howe, services as deputy warden, Ward 5	6 00	
Charles H. Hale, services as clerk, Ward 5	10 00	
George H. Osborne, services as dep- uty clerk, Ward 5	6 00	
John P. Tenney, services as inspector, Ward 5	5 00	
James F. Russell, services as in- spector, Ward 5	10 00	
Fred A. O'Connor, services as deputy inspector, Ward 5	6 00	
Daniel Kelleher, services as deputy inspector, Ward 5	6 00	
George F. Leonard, services as deputy inspector, Ward 5	5 00	
Saml. M. Jackson, services as warden, Ward 6	10 00	
Wm. F. Woodman, services as deputy warden, Ward 6	6 00	
Zadoc Long, services as clerk, Ward 6	10 00	
<i>Amounts carried forward .</i>	\$16,155 50	\$15,500 00

<i>Amounts brought forward .</i>	\$16,155 50	\$15,500 00
George E. Wales, services as deputy clerk, Ward 6	6 00	
James W. Hill, services as inspector, Ward 6	10 00	
Arthur Muldoon, services as inspector, Ward 6	10 00	
Geo. F. Richardson, services as deputy inspector, Ward 6	8 00	
Howard Carleton, services as deputy inspector, Ward 6	6 00	
Amasa W. B. Huff, services as warden, Ward 7	10 00	
Moses Clark, jun., services as clerk, Ward 7	10 00	
Henry C. Daniels, services as deputy clerk, Ward 7	6 00	
George S. Woodbridge, services as inspector, Ward 7	10 00	
George W. Lamson, services as inspector, Ward 7	10 00	
Robert B. Edes, services as deputy inspector, Ward 7	6 00	
Lewis H. Farlow, services as deputy inspector, Ward 7	6 00	
Sundry small bills	4 01	
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Total, as per item No. 29 of expenses .		\$16,257 51
		<hr/>
Amount overdrawn, transferred into excess and deficiency account		\$757 51

Newton Free Library.

Appropriation		\$8,500 00
Hannah P. James, services, librarian,	\$500 00	
Bradford K. Peirce, services, libra-		
rian	500 00	
Elizabeth P. Thurston, services as		
assistant librarian	600 00	
Louise J. Smallwood, services as		
assistant librarian	400 00	
Etta P. Cleveland, services as assist-		
ant librarian	400 00	
C. A. Flanders, services as assistant		
librarian	400 00	
James J. Tower, services as janitor .	800 00	
Clarke & Carruth, books	707 35	
J. A. McFadden, books	74 00	
Estes & Lauriat, books	36 75	
The History Company, books	13 50	
The Prince Society, books	13 00	
Gately & Co., books	12 00	
H. C. Nash, books	10 40	
Martin Garrison & Co., books	7 50	
N. J. Bartlett & Co., books	7 30	
Houghton, Mifflin, & Co., books	5 50	
Cupples, Upham, & Co., books	5 00	
Massachusetts Historical Society,		
books	5 00	
James P. Magee, books	4 17	
B. A. Fowler & Co., books	3 75	

<i>Amounts brought forward .</i>	<u>\$4,505 22</u>	<u>\$8,500 00</u>
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<i>Amounts brought forward</i> .	\$4,505 22	\$8,500 00
John J. W. Reeves, books	3 00	
H. T. Sladen, books	2 00	
H. D. Noyes & Co., subscriptions .	133 20	
John Cutler, subscriptions	92 50	
Bradford K. Peirce, subscriptions .	48 00	
"The Commercial Gazette," sub- scriptions	12 60	
Globe Printing Co., subscriptions .	12 00	
"Boston Daily Advertiser," subscrip- tions	12 00	
Nickelson & Co., subscriptions . .	12 00	
"Post" Publishing Co., subscrip- tions	9 00	
"The Evening Post," subscriptions .	9 00	
"The Tribune" Association, sub- scription	8 50	
George W. Armstrong, subscriptions,	8 25	
"The Tribune" Co., subscription .	7 20	
"The Publisher's Weekly," subscrip- tion	7 00	
"The Republican" Co., subscription,	7 00	
"The World," subscription	7 50	
"Evening Star" Newspaper Com- pany, subscription	6 00	
C. C. Fulton & Co., subscription .	6 00	
R. M. Pulsifer & Co., subscription .	6 00	
"The Sun," subscription	6 00	
"The Globe," subscription	6 00	
<i>Amounts carried forward</i> .	\$4,925 97	\$8,500 00

<i>Amounts brought forward</i> . . .	\$4,925 97 ^c	\$8,500 00
"The Gazette" Printing Company, subscription	6 00	
"The Journal" Newspaper Company, subscription	6 00	
"New York Herald," subscription .	6 00	
The Press Co., Limited, subscrip- tion	5 40	
The Franklin Institute, subscriptions,	5 00	
The "Alta California" Publishing Co., subscription	4 50	
Curtis Guild & Co., subscription .	4 00	
H. G. Parker, subscription . . .	3 20	
"Bibliotheca Sacra," subscription .	3 00	
"Newton Graphic," subscription .	2 00	
J. H. H. McNamee, binding books .	141 42	
Abby Irvin, covering books . . .	4 80	
Lucy F. Soule, covering books . .	3 10	
Newton & Watertown Gas Light Company, gas	543 60	
Albert Brackett, coal	305 79	
New England Telegraph & Tele- phone, rental, etc.	47 16	
Water Department, use of water .	32 49	
Howard Brothers, ice	15 00	
Hannah P. James, amount paid for cleaning library	124 69	
Hannah P. James, sundry cash ex- penses	4 05	
<i>Amounts carried forward</i> . . .	\$6,193 17	\$8,500 00

<i>Amounts brought forward . .</i>	<i>\$6,193 17</i>	<i>\$8,500 00</i>
Neil McGinnis, expressage of books .	875 00	
L. N. Burbank, expressage of books,	26 00	
Smith Ounderkirk, expressage of books	25 00	
W. E. Wiswall, expressage of books,	15 60	
C. H. Hurd, expressage	7 25	
George L. Pearson, expressage . .	5 20	
Kenney's Express, expressage . .	2 10	
W. C. Gaudelet, agency	50 00	
B. Billings, agency	40 00	
Alfred Brush, agency	40 00	
J. J. Peck, agency	30 00	
C. W. Kinder, agency	20 00	
Newton Centre Associates, agency .	18 75	
Everett E. Moody, agency	16 50	
A. E. Brickett, agency	10 00	
Hallett Brothers, paper	48 88	
E. A. Smallwood, postal cards and printing	37 35	
George H. Pratt, printing	32 50	
E. F. Smallwood, postal cards and printing	17 50	
Rand Avery Company, cards, en- velopes, etc.	10 00	
John S. Farlow, cash paid for postage,	6 00	
R. Hollings & Co., gas-fixtures .	280 19	
B. C. Noyes & Co., furniture . .	207 00	
Boston Chair Manf. Co., furniture .	98 63	
<i>Amounts carried forward . .</i>	<i>\$8,112 62</i>	<i>\$8,500 00</i>

<i>Amounts brought forward</i>	. \$8,112 62	\$8,500 00
Paine's Furniture Co., furniture	. 30 90	
Joel Goldthwait & Co., carpets	. 61 37	
Boston Belting Company, hose	. 22 50	
Ernst Heerde, shades	. 13 50	
Allen & Noble, rubber tips	. 12 75	
Stephen Holmes, material and labor,	48 67	
John W. Scott, material and labor	. 18 65	
Edward Pike, material and labor	. 6 67	
A. Erickson, material and labor	. 4 32	
Library Bureau, supplies	. 54 65	
S. O. Thayer & Co., supplies	. 27 07	
A. Storrs, Bement & Co., supplies	. 22 02	
Weeks & Potter, supplies	. 18 60	
Barber Brothers, supplies	. 14 92	
Williams & Everett, supplies	. 12 39	
Blair & Hallett, supplies	. 6 50	
Smith & Bryam, supplies	. 5 30	
A. R. Gay & Co., supplies	. 3 50	
Hooper, Lewis & Co., supplies	. 3 10	
Total, as per item No. 30 of expenses	. \$8,500 00	

Newton High School Building (Enlargement).

Henry F. Ross, payments on account of contract,	\$ 17,215 50
Walworth Manufacturing Company, payments on account of contract	2,917 00
Moses Pond & Co., payments on account of contract	589 00
Allen & Kenway, services as architects	950 00
Albert Brackett for coal	55 09
Total, as per item No. 31 of expenses	\$21,726 59

Newton Cottage Hospital.

Appropriation	\$1,000 00
Paid George S. Bullens, treasurer, as per item No. 32 of expenses	1,000 00

Parks and Squares.

Appropriation	\$2,500 00
Myles J. Joyce, care of Farlow Park, \$516 47	
Simpson Brothers, concreting Farlow Park	500 00
Newton Cemetery, for trees, etc. . .	381 63
Arthur Muldoon, material and labor, Newton Centre	340 00
William C. Strong, for trees, etc. . .	80 00
John Farrell, care of Washington Park	75 00
Water Department, use of water . .	67 33
D. W. Eagles, care of park, junction of Centre and Clark Streets, in- cluding manure	50 00
J. F. C. Hyde, for trees	40 50
Michael Kennedy, setting out trees .	38 50
C. P. Powell, care of Lincoln Park .	29 00
Milo Lucas, material and labor . .	26 30
John A. Kenrick, Treasurer, labor, men, and teams, Highway De- partment	28 88
J. W. Conroy & Son, material and labor	20 00
<i>Amounts carried forward . .</i>	<u>\$2,193 61</u> <u>\$2,500 00</u>

<i>Amounts brought forward</i> . . .	\$2,193 61	\$2,500 00
J. J. Johnson, bedding plants . . .	18 00	
Timothy Stuart, loam and sods . . .	17 25	
J. P. Keating, use of teams . . .	14 50	
Stephen F. Cate, use of teams . . .	6 00	
H. A. Spear, use of teams . . .	6 00	
John Mardon, labor, Farlow Park . . .	6 00	
O. F. Lucas, supplies . . .	5 22	
J. Q. Harrington, repairing lawn- mower	5 00	
Fulton Iron Foundry Co., supplies . . .	4 50	
C. W. Morehouse, supplies . . .	3 15	
B. Billings, trees	3 00	
H. W. Fanning, trees	2 50	
John Irving, manure	2 50	
M. C. Higgins, material and labor . . .	2 16	
J. O. Watson, use of team	1 00	
Murray & Farrell, material and labor, . . .	80	
C. H. Hurd, expressage	50	
Total, as per item No. 33 of expenses . . .		<u>\$2,291 69</u>
Balance unexpended, transferred into excess and deficiency account		<u><u>\$208 31</u></u>

Police Department.

Appropriation \$23,350 00

REGULAR POLICE OFFICERS.

Daniel M. Hammond, city marshal . \$1,500 00

Charles F. Richardson, captain of
police 1,178 80

Amounts carried forward . . \$2,678 80 \$23,350 00

<i>Amounts brought forward</i> .	.\$2,678 80	\$23,350 00
Charles E. Davis, sergeant of police .	1,090 58	
N. F. Bosworth, patrolman .	1,000 00	
W. G. Bosworth, patrolman .	1,000 00	
W. C. Emerson, patrolman .	1,000 00	
Robert S. Harrison, patrolman .	1,000 00	
Charles P. Heustis, patrolman .	1,000 00	
John Ryan, patrolman .	1,000 00	
John Purcill, patrolman .	1,000 00	
James D. Henthorn, patrolman .	997 26	
Rufus H. Moulton, patrolman .	997 26	
Frank B. Fletcher, patrolman .	994 52	
George E. F. Baker, patrolman .	991 78	
Edson C. Holmes, patrolman .	983 58	
John W. Conroy, jr., patrolman .	900 00	
Ambrose M. Fuller, patrolman .	897 54	
Charles O. Davis, patrolman .	878 76	
Charles T. Bartlett, patrolman .	806 79	
Thomas C. Clay, patrolman .	806 79	
John W. Quilty, patrolman .	747 95	
A. F. A. G. Libby, patrolman .	700 10	
	<hr/>	
	\$21,471 71	

SPECIAL POLICE OFFICERS.

Bernard F. Burke . . .	\$451 54
Thomas O'Shaughnessey . . .	86 40
Martin C. Laffie . . .	76 80
A. F. A. G. Libby . . .	12 00
Charles R. Young . . .	4 80

<i>Amounts carried forward</i> .	<hr/> \$22,093 25	<hr/> \$23,350 00
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<i>Amounts brought forward</i>	\$22,093 25	\$23,350 00
W. A. Leonard	4 80	
Bernard Early	4 80	
Russell F. Smith	4 80	
Clark Fisher	4 80	
Dustin J. Smith	4 80	
William P. Soule	4 80	
Peter R. Mullen	2 40	
	<hr/>	
	\$22,134 45	

INCIDENTAL EXPENSES.

Stephen F. Cate, board of horse and use of teams	294 56	
Robert Weir, use of teams	20 75	
Central Stables, use of teams	21 00	
H. A. Spear, use of teams	10 50	
Daniels' Nonantum Stables, use of teams	8 50	
S. L. Pratt, use of teams	8 50	
Charles G. Tinkham, use of teams	8 00	
Fitzgerald Brothers, use of teams	5 50	
W. H. Mague, use of teams	2 50	
A. F. Harrington, use of teams	1 50	
Harris Express, use of teams	1 50	
John Purcill, conveyance of pris- oners	61 00	
C. O. Davis, conveyance of prisoners,	32 95	
R. S. Harrison, conveyance of pris- oners	13 57	
	<hr/>	
<i>Amounts carried forward</i>	\$22,624 78	\$23,350 00

<i>Amounts brought forward .</i>	\$22,624 78	\$23,350 00
N. F. Bosworth, conveyance of prisoners	11 89	
Daniel M. Hammond, meals for prisoners, etc.	125 22	
Charles P. Heustis, meals for prisoners, etc.	32 75	
A. D. Colby, meals for prisoners, etc.	4 25	
Newton and Watertown Gaslight Co., gas	101 58	
Albert Brackett, coal	47 57	
Water Department, use of water .	36 00	
John P. Lovell Arms Co., supplies .	58 50	
J. R. McLaughlin, attendance upon sick horses	31 00	
Joel Goldthwait & Co., carpets .	21 32	
W. S. Slocum, legal services . .	25 00	
C. A. Twitchell & Co., badges . .	13 00	
James D. Henthorn, sundry cash expenses	43 54	
Charles F. Richardson, sundry cash expenses	30 33	
E. C. Holmes, sundry cash expenses,	7 90	
W. H. Tabor, sundry cash expenses .	6 09	
C. E. Davis, sundry cash expenses .	5 12	
John Ryan, sundry cash expenses .	2 00	
J. R. Nason, material and labor .	25 95	
J. O. Evans' Sons, material and labor,	21 50	
J. Carroll, material and labor . .	8 35	
<i>Amounts carried forward .</i>	\$23,283 64	\$23,350 00

<i>Amounts brought forward .</i>	\$23,283 64	\$23,350 00
A. J. Fiske & Co., material and labor,	2 40	
Clark Man'f. Co., material and labor,	2 20	
J. W. Conroy & Son, material and labor	3 25	
J. H. Nickerson, supplies	6 00	
C. A. Taylor, supplies	5 76	
George H. Ingraham, supplies	4 50	
C. Seaver, jun., photographs	5 50	
Mrs. Mary Twomey, washing blankets	5 50	
S. B. Maxwell, washing blankets	1 75	
C. G. Estes, brooms	6 00	
John McDonald, labor	4 00	
E. S. Colton, supplies	3 00	
H. C. Hoyt, use of team	1 50	
J. Brown, repairing clock	1 50	
Sundry small bills	8 35	
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Total, as per item No. 34 of expenses		\$23,344 85
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Balance unexpended, transferred into excess and deficiency account		\$5 15

Poor out of Almshouse.

Appropriation	\$8,000 00
Nathan Mosman, services as city almoner and clerk of Board of Overseers	\$700 00
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<i>Amounts carried forward</i>	\$8,000 00

<i>Amounts brought forward</i> . .	\$700 00	\$8,000 00
Edwin O. Childs, services, overseer,		
Ward 1	50 00	
E. S. Colton, services, overseer,		
Ward 2	50 00	
George E. Allen, services, overseer,		
Ward 3	50 00	
Nathan Mosman, services, overseer,		
Ward 4	50 00	
H. C. Hoyt, services, overseer,		
Ward 5	50 00	
George Warren, services, overseer,		
Ward 6	50 00	
John Warner, services, overseer,		
Ward 7	50 00	
Nathan Mosman, amount paid to		
sundry persons	213 15	
Worcester Lunatic Hospital, care of		
sundry persons	970 97	
Northampton Lunatic Hospital, care		
of sundry persons	180 22	
Worcester Insane Asylum, care of		
sundry persons	385 86	
Newton Cottage Hospital, care of		
sundry persons	857 76	
Commonwealth of Massachusetts,		
care of sundry persons	229 64	
City of Boston, partial support of		
poor	204 10	
<i>Amounts carried forward</i> . .	<u>\$4,091 70</u>	<u>\$8,000 00</u>

<i>Amounts brought forward .</i>	<i>.\$4,091 70</i>	<i>\$8,000 00</i>
City of Malden, partial support of poor	96 00	
City of Waltham, partial support of poor	59 57	
City of Lawrence, partial support of poor	48 00	
Town of Chicopee, partial support of poor	95 50	
Town of North Andover, partial sup- port of poor	74 16	
Town of Braintree, partial support of poor	71 25	
Town of Webster, partial support of poor	38 16	
Town of Stoneham, partial support of poor	33 15	
Town of Paxton, partial support of poor	4 00	
Dr. L. R. Stone, medical attendance,	21 00	
Dr. F. E. Crockett, medical attend- ance	16 00	
Dr. F. M. O'Donnell, medical at- tendance	16 00	
Dr. P. Vincent, medical attendance .	12 00	
Dr. W. H. McOwen, medical attend- ance	11 75	
Dr. James Utley, medical attendance,	7 00	
Dr. C. F. Haynes, medical attendance,	7 00	

<i>Amounts carried forward .</i>	<i>.\$4,702 24</i>	<i>\$8,000 00</i>
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<i>Amounts brought forward . . .</i>	<i>\$4,702 24</i>	<i>\$8,000 00</i>
Dr. S. A. Sylvester, medical attendance	6 50	
Dr. E. P. Scales, medical attendance,	6 00	
Dr. Eben Thompson, medical attendance	5 00	
Dr. F. L. Thayer, medical attendance	5 00	
Dr. H. B. Stoddard, medical attendance	6 00	
Dr. J. H. Bodge, medical attendance,	2 00	
Drs. O. E. & W. O. Hunt, medical attendance	1 00	
Dr. Albert Nott, medical attendance,	1 00	
J. H. Woolrich, prescriptions	6 55	
C. F. Rogers, prescriptions	2 00	
Augustus Williams, prescriptions	1 60	
George H. Ingraham, prescriptions	75	
J. J. Noble, prescriptions	75	
Hubbard & Proctor, prescriptions	63	
James McGourty, funeral expenses	57 00	
Fitzgerald Brothers, funeral expenses	10 00	
W. H. Mague, funeral expenses	5 00	
Newton Cemetery Corporation, interments	9 00	
Mrs. J. G. Latta, board of Richardson children	72 00	
Roxbury Home, board of Miss Crawley	54 00	
<i>Amounts carried forward . . .</i>	<i>\$4,954 02</i>	<i>\$8,000 00</i>

<i>Amounts brought forward</i>	. \$4,954 02	\$8,000 00
Mrs. R. A. Lewis, board of Richardson children	44 00	
Miss Alice Williston, board of Sullivan children	43 60	
R. V. C. Emerson, board of Richardson children	16 00	
J. R. Farnum, rent of house for Mrs. Pitts	110 00	
M. Mahoney, rent of house for Mrs. Ryan	60 00	
Wm. O. Hunt, rent of house for Mrs. Denning	49 00	
Mrs. William Collins, rent of house for Mrs. Jeffers	48 00	
B. F. Houghton, rent of house for Mrs. Cazmay	24 00	
J. B. Murphy, rent of house for Mrs. Boyce	24 00	
Thomas Mullen, rent of house for Mrs. Mague	22 50	
Mrs. Ann Rotchford, rent of house for P. McBride	16 00	
C. Strout & Sons, groceries	214 90	
A. A. Savage, groceries	212 70	
J. B. Murphy, groceries	198 75	
W. O. Knapp & Co., groceries	137 61	
F. L. Cook, groceries	124 55	
G. P. Atkins, groceries	85 00	
<i>Amounts carried forward</i>	. \$6,384 63	\$8,000 00

<i>Amounts brought forward</i>	. \$6,384 63	\$8,000 00
H. W. Fanning & Son, groceries	. 82 71	
H. E. Woodberry, groceries	. 68 00	
E. Vickers, groceries	. 68 40	
W. P. Holden, groceries	. 67 50	
B. F. Houghton, groceries	. 63 50	
Alonzo Whitney, groceries	. 57 50	
J. W. Davis & Co., groceries	. 52 00	
Howard B. Coffin, groceries	. 44 96	
B. B. Vassall, groceries	. 41 35	
I. R. Stevens, groceries	. 34 96	
H. A. Sherman, groceries	. 34 40	
Ford's Boston Branch, groceries	. 32 00	
George H. Adams, groceries	. 16 00	
William Lowe, groceries	. 5 75	
M. Mahoney, groceries	. 2 00	
W. Conner, groceries	. 1 99	
Albert Brackett, fuel	. 467 79	
C. F. Eddy & Co., fuel	. 212 17	
J. W. Hill, fuel	. 125 62	
J. W. Mitchell, fuel	. 89 26	
Newton Coal Company, fuel	. 72 65	
Almshouse Department, fuel	. 71 50	
Daniel Warren, fuel	. 25 00	
John Dolan, fuel	. 23 00	
J. Edward Hills, fuel	. 18 10	
B. C. Baker, fuel	. 8 50	
Stephen F. Cate, use of teams	. 12 00	
Fitzgerald Brothers, use of teams	. 1 00	
<i>Amounts carried forward</i>	. \$8,184 94	\$8,000 00

<i>Amounts brought forward</i>	. \$8,184 94	\$8,000 00
Eames Express, moving furniture	. 5 00	
C. E. Scamman, provisions	. 10 00	
S. Nay, provisions	. 8 00	
W. B. Whittier, provisions	. 2 00	
W. Howes, provisions	. 2 00	
J. V. Sullivan, supplies	. 18 20	
John T. Moody, supplies	. 9 25	
A. J. Gordon, supplies	. 7 35	
E. E. Moody, supplies	. 5 50	
L. A. Hall, supplies	. 5 38	
M. R. Warren, supplies	. 5 25	
O. B. Leavitt, supplies	. 3 50	
C. W. Goodsoe, supplies	. 2 24	
Fanning Printing Company, supplies	1 50	
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Total, as per item No. 35 of expenses	. \$8,269 41	
Amount overdrawn, transferred into excess and deficiency account	. 269 41	

Public Property.

Appropriation	. \$13,000 00	
Moses Pond & Co., ventilating		
Adams and Hyde schoolhouses,	\$1,125 00	
Simpson Bros., concreting	. 773 23	
Rufus G. Brown & Co., heating ap- paratus	. 480 91	
Highland Foundry Co., furnaces, etc.	348 21	
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<i>Amounts carried forward</i>	. \$2,727 35	\$13,000 00

<i>Amounts brought forward . . .</i>	<i>\$2,727 35</i>	<i>\$13,000 00</i>
Walker Pratt Manufacturing Com- pany, furnaces, etc.	377 97	
Allen & Kenway, services as archi- tects	393 56	
Keeler & Co., cases for City Engi- neer's Department	262 00	
William Welch, loam, grading, etc., High School	394 87	
First Baptist Society, use of chapel, for school in Thompsonville . .	150 00	
J. L. Randall, care of Prospect School House Hall	130 00	
M. C. Lucy, labor, etc.	106 00	
Newton Associates, loam	100 00	
J. W. Gregg, slate urinals	89 93	
City of Newton, curbing	80 04	
Walworth Construction & Supply Co., steam heating apparatus . .	75 00	
Oliver Whyte & Co., brass railing .	75 00	
Timothy Stuart, labor, men and teams	77 88	
Walworth Manufacturing Company, grate bars, etc.	44 28	
F. E. Hamblin, drain pipe, etc. . .	39 20	
John Welch, grading, etc.	35 00	
G. Fuller & Son, lumber	29 42	
Daniel's Nonantum Stables, use of teams	24 00	
<i>Amounts carried forward . . .</i>	<i>\$5,211 50</i>	<i>\$13,000 00</i>

<i>Amounts brought forward</i> . . .	\$5,211 50	\$13,000 00
Clark & Buckley, bureau . . .	21 30	
Newton & Watertown Gaslight Co., gas	16 23	
John A. Kenrick, Treasurer, labor, men, and teams, Highway De- partment	15 06	
John Joyce, labor, men, and teams .	14 91	
C. S. Pulsifer, loam and sods . . .	17 65	
Revere Rubber Company, hose . . .	14 00	
James Dorney, labor	14 00	
Albert Brackett, coal	11 71	
"Newton Journal," advertising . .	10 00	
"Newton Graphic," advertising . .	3 25	
N. Boynton & Co., flag	7 70	
H. D. Woods, sundry incidental ex- penses	5 62	
Bernard Early, sundry incidental ex- penses	2 00	
Michael Ryan, labor	4 38	
W. G. Roby & Co., copper	3 78	
C. H. Hurd, expressage	2 00	
Stephen Holmes, material and labor .	2,074 55	
Wm. Pettigrew, material and labor .	867 38	
C. Phillips & Co., material and labor .	494 73	
W. L. Smith, material and labor . .	466 32	
Bemis & Jewett, material and labor .	398 50	
Henry F. Ross, material and labor .	359 01	
Milo Lucas, material and labor . .	288 90	
<i>Amounts carried forward</i> . . .	\$10,324 48	\$13,000 00

<i>Amounts brought forward .</i>	\$10,324 48	\$13,000 00
Higgins & Nickerson, material and labor	247 25	
R. J. Morrissey, material and labor .	194 98	
H. H. Hunt, material and labor .	133 61	
W. P. Leavitt & Son, material and labor	133 35	
M. Taffe, material and labor .	133 00	
Moses Pond & Co., material and labor	130 90	
J. W. Briggs, material and labor .	125 00	
W. H. French & Co., material and labor	122 70	
Isaac Smith, material and labor .	105 75	
L. A. Gammans, material and labor .	101 79	
F. H. Humphrey, agent, material and labor	96 13	
W. A. Fogwill, material and labor .	89 30	
Russell & Burke, material and labor	76 85	
H. F. Miller, material and labor .	71 40	
A. G. Tupper, material and labor .	60 09	
F. T. Burgess & Co., material and labor	56 50	
S. D. Garey, material and labor .	51 66	
J. W. Conroy & Son, material and labor	51 50	
J. A. Nevins, material and labor .	50 00	
H. F. Wellington, material and labor	48 31	
A. W. Snow, material and labor .	42 55	
 <i>Amounts carried forward .</i>	 \$12,447 10	 \$13,000 00

<i>Amounts brought forward .</i>	\$12,447 10	\$13,000 00
Arthur Muldoon, material and labor	41 50	
O. B. Leavitt, material and labor .	39 08	
J. D. Billings, material and labor .	35 48	
T. J. Hartnett, material and labor .	31 96	
L. H. Cranitch, material and labor .	30 85	
T. S. Pingree, material and labor .	29 26	
Chas. H. Hale, material and labor .	28 00	
J. E. Trowbridge, material and labor	26 11	
Edward Pike, material and labor .	25 68	
Charles Scott, material and labor .	24 20	
Charles Keiser, material and labor .	22 36	
William F. Soule, material and labor,	20 40	
J. H. Staples, material and labor .	17 25	
Charles A. Cole, material and labor .	17 00	
Thomas Johnson, material and labor,	17 00	
David Russell, material and labor .	15 17	
F. W. Cole, material and labor .	14 00	
A. J. Fiske & Co., material and labor,	12 50	
M. Frank Lucas, material and labor,	15 32	
Gannon Brothers, material and labor,	11 80	
Martin Hunting, material and labor .	11 75	
H. H. Miles, material and labor .	11 36	
Ralph Davenport, material and labor,	11 00	
Charles A. Hill, material and labor .	10 55	
J. O. Evans' Sons, material and labor,	10 13	
M. C. Higgins, material and labor .	9 92	
G. M. D. Fernald, material and labor,	7 55	
J. M. Burr, material and labor .	7 12	
<i>Amounts carried forward .</i>	\$13,001 40	\$13,000 00

<i>Amounts brought forward .</i>	\$13,001 40	\$13,000 00
Allen & Barry, material and labor .	6 65	
D. O. Driscoll, material and labor .	6 75	
Lyman Hicks, material and labor .	6 00	
S. G. Steeves, material and labor .	3 85	
William Bliss, material and labor .	2 55	
G. L. Avery, material and labor .	2 50	
James Dunn, material and labor .	2 50	
Thomas Sinclair, material and labor .	2 00	
W. L. Stiles, Jr., agent, supplies .	53 45	
A. A. Savage, supplies . . .	16 75	
William Hall & Co., supplies . .	13 16	
H. A. Sherman, supplies . . .	12 38	
Barber Brothers, supplies . . .	8 07	
S. O. Thayer & Co., supplies . .	3 75	
A. H. Adams, supplies . . .	3 50	
Greenwood & Co., supplies . .	3 06	
Sundry small bills	12 80	
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Total, as per item No. 36 of expenses .		\$13,161 12
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Amount overdrawn, transferred into excess and deficiency account		\$161 12

Read Fund Income.

Paid to sundry parties, in accordance with the will of the late Charles A. Read, income received from the trustees, upon invest- ments, as per item No. 37 of expenses .	\$1,901 49
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Salaries.

Appropriation		\$16,145 00
J. Wesley Kimball, mayor . . .	\$1,000 00	
Isaac F. Kingsbury, city clerk . .	2,000 00	
John A. Kenrick, city treasurer and collector of taxes	3,000 00	
Benjamin F. Otis, city auditor . .	2,000 00	
Winfield S. Slocum, city solicitor .	1,250 00	
Moses Clark, Jr., deputy collector .	1,500 00	
Isaac Hagar, chairman board of assessors	1,200 00	
Samuel M. Jackson, assessor . . .	750 00	
Howard B. Coffin, assessor . . .	750 00	
J. D. Wellington, city messenger .	1,100 00	
J. D. Wellington, sealer of weights and measures	75 00	
Albert S. Glover, clerk of common council	200 00	
John C. Brimblecom, assistant to city clerk	520 00	
Edwin O. Childs, assistant assessor, Ward 1	96 00	
A. A. Savage, assistant assessor, Ward 2	144 00	
George E. Allen, assistant assessor, Ward 3	160 00	
C. A. Miner, assistant assessor, Ward 4	208 00	
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<i>Amounts carried forward .</i>	\$15,953 00	\$16,145 00

<i>Amounts brought forward</i>	\$15,953 00	\$16,145 00
W. E. Clarke, assistant assessor,		
Ward 5	123 52	
George Warren, assistant assessor,		
Ward 6	128 00	
E. W. Cobb, assistant assessor,		
Ward 7	288 00	
	<hr/>	
Total, as per item No. 38 of expenses	.	\$16,492 52
		<hr/>
Amount overdrawn, transferred into excess and deficiency account		\$347 52

Schools, Conveyance of Pupils.

Appropriation	\$750 00	
Transferred to appropriation for even- ing schools	70 00	
	<hr/>	\$680 00
Fred B. Spear, conveyance . . .	\$620 00	
William E. Wiswall, conveyance .	56 25	
	<hr/>	
Total, as per item No. 39 of expenses	.	\$676 25
		<hr/>
Balance unexpended, transferred into excess and deficiency account		\$3 75

Evening Schools.

Appropriation	\$550 00	
Transferred from general appropria- tion for schools	500 00	
	<hr/>	
<i>Amount carried forward</i> . . .	\$1,050 00	

<i>Amount brought forward</i>	.	.	\$1,050 00	
Transferred from appropriation for				
school incidentals	.	.	100 00	
Transferred from appropriation for				
conveyance of pupils	.	.	70 00	
				\$1,220 00
George M. Weed, teacher	.	.	\$98 00	
Lulu M. Bagley, teacher	.	.	93 00	
Charlotte N. Wilkins, teacher	.	.	73 50	
Ethel Cushing, teacher	.	.	72 00	
Anastasia Peters, teacher	.	.	70 50	
Emma B. Wilkins, teacher	.	.	67 50	
Martha M. Dix, teacher	.	.	52 00	
L. F. Warren, teacher	.	.	51 00	
Nelson Freeman, teacher	.	.	48 00	
Edwin E. Hale, teacher	.	.	43 00	
Rose A. Harkins, teacher	.	.	42 00	
Ida Collins, teacher	.	.	30 00	
Frank H. Noyes, teacher	.	.	30 00	
Eliza J. Lovely, teacher	.	.	22 50	
Esther E. Barry, teacher	.	.	22 50	
Martha A. Lovely, teacher	.	.	21 00	
Margaret E. Carey, teacher	.	.	19 50	
Mary E. Wall, teacher	.	.	19 50	
Alonzo A. Weed, teacher	.	.	18 00	
Lottie E. Stearns, teacher	.	.	16 50	
Emma F. Chater, teacher	.	.	16 50	
Ellen M. Horrigan, teacher	.	.	15 00	
Gertrude G. Tewksbury, teacher	.	.	13 50	
<i>Amounts carried forward</i>	.	.	\$955 00	\$1,220 00

<i>Amounts brought forward</i>	.	.	\$955 00	\$1,220 00
Fanny L. Stowell, teacher	.	.	13 50	
Louise W. Clelland, teacher	.	.	4 50	
Alonzo R. Weed, teacher	.	.	4 00	
Minnie E. Stearns, teacher	.	.	3 00	
Honora Sweeney, janitor	.	.	24 75	
Mary Welch, janitor	.	.	12 00	
Charles R. Young, janitor	.	.	12 00	
James Dunn, janitor	.	.	6 00	
Edward Pike, material and labor	.	.	47 82	
O. B. Leavitt, material and labor	.	.	35 76	
Newton and Watertown Gas Light Company, gas	.	.	42 45	
"Newton Graphic," advertising	.	.	10 00	
"Newton Journal," advertising	.	.	7 00	
Adams & Ingraham, supplies	.	.	28 20	
Harper & Brothers, supplies	.	.	8 91	
William Ware & Co., supplies	.	.	3 00	
<hr/>				
Total, as per item No. 40 of expenses	.	.		\$1,217 89
<hr/>				
Balance unexpended, transferred into excess and deficiency account	.	.	.	\$2 11

SCHOOLS.

GENERAL APPROPRIATION, EDUCATIONAL DEPARTMENT.

General appropriation for schools, \$101,000 00

Received from dog tax for 1886 by

order of City Council . . . 2,337 66

\$103,337 66Transferred to appropriation for
evening schools by order of City

Council \$500 00

\$102,837 66

EXPENDITURES IN DETAIL.

Thomas Emerson, superintendent . \$2,800 00

Thomas Emerson, secretary School

Board 300 00

\$3,100 00*High School.*

Edward H. Cutler, head master . \$1,750 00

Edward J. Goodwin, head master . 1,125 00

Ezra W. Sampson, master . . 2,200 00

S. Warren Davis, assistant master . 2,000 00

Andrew J. George, assistant master . 675 00

George L. Chandler, assistant mas-

ter 562 50

Caroline Spear, assistant . . 1,000 00

S. Alice Worcester, assistant . . 1,000 00

Amounts carried forward . \$13,412 50

\$102,837 66

<i>Amounts brought forward</i>	\$13,412 50	\$102,837 66
Maybel P. Davis, assistant	1,000 00	
Lida P. Underhill, assistant	1,000 00	
M. Abby Smith, assistant	625 00	
Evelyn Rich, assistant	625 00	
S. Alice Ranlett, assistant	625 00	
Emma F. Johnson, assistant	905 00	
Frances P. Owen, assistant	337 50	
Minerva E. Leland, assistant	281 25	
Harriet L. Merrow, assistant	135 00	
	<hr/>	
	\$18,946 25	

Special Teachers.

Emma F. Bowler, drawing and writing	\$665 00	
Jennie E. Ireson, calisthenics and elocution	500 00	
Horace M. Walton, instructor in music	1,500 00	
Frank N. Brown, military drill	280 00	
George H. Benyon, military drill	120 00	
Ellen M. Bond, sewing	450 00	
Julia Grant, sewing	450 00	
Sarah L. Dix, sewing	202 52	
	<hr/>	
	\$23,113 77	

Bigelow School.

H. Chapin Sawin, master	\$1,900 00	
Martha M. Bakeman, head assistant	750 00	
	<hr/>	
<i>Amounts carried forward</i>	\$25,763 77	\$102,837 66

<i>Amounts brought forward</i> .	\$25,763 77	\$102,837 66
Annie E. George, assistant . . .	600 00	
S. Louise Shelton, assistant . . .	600 00	
Emily J. Dyer, assistant . . .	600 00	
Elizabeth Ayles, assistant . . .	600 00	
Mary R. Putney, assistant . . .	560 00	
Augusta A. Lentell, assistant . . .	375 00	
Elizabeth A. Chapin, assistant . . .	225 00	
	<hr/>	
	\$29,323 77	

Underwood School.

Charlotte E. Sewell, principal . . .	\$750 00	
Ada L. Donkin, assistant . . .	600 00	
Annie L. Wood, assistant . . .	600 00	
Josephine W. Littlefield, assistant . . .	600 00	
	<hr/>	
	\$31,873 77	

Lincoln School.

Nellie B. Rand, principal . . .	\$600 00	
Mary E. Wall, assistant . . .	196 25	
	<hr/>	
	\$32,670 02	

Eliot School.

George G. Edwards, master . . .	\$1,900 00	
H. Augusta Millard, head assistant . . .	750 00	
Louise W. Clelland, assistant . . .	600 00	
Ellen B. Prime, assistant . . .	545 00	
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<i>Amounts carried forward</i> .	\$36,465 02	\$102,837 66
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Amounts brought forward . \$36,465 02 \$102,837 66

Jackson School.

Eliza J. Lovely, principal . . .	\$750 00
Gertrude G. Tewksbury, assistant . .	600 00
Lottie E. Stearns, assistant . . .	600 00
Rose A. Harkins, assistant . . .	568 75
Mary A. Wellington, assistant . . .	375 00
Martha Lovely, assistant . . .	187 50
	<hr/>
	\$39,546 27

Adams School.

William A. Spinney, master . . .	\$1,900 00
V. E. Hapgood, head assistant . . .	525 00
Abby J. Fiske, head assistant . . .	225 00
Abby J. Fiske, assistant . . .	375 00
Estella M. Haynes, assistant . . .	600 00
Angelia A. Smith, assistant . . .	600 00
Clara M. Fox, assistant . . .	343 75
Mary A. Wellington, assistant . . .	225 00
Nellie P. Warren, assistant . . .	112 50
Sarah A. Whitney, assistant . . .	56 25
Mary Noble, assistant . . .	5 00
	<hr/>
	\$44,513 77

Clafin School.

Herbert L. Sylvester, master . . .	\$1,737 50
Carrie H. Rugg, head assistant . . .	750 00
Lydia A. Brierly, assistant . . .	600 00

Amounts carried forward . \$47,601 27 \$102,837 66

<i>Amounts brought forward</i>	\$47,601 27	\$102,837 66
Ellen M. Horrigan, assistant	600 00	
Ellen S. Tewksbury, assistant	600 00	
Effie M. Herrick, assistant	187 50	
Annie A. Jackson, assistant	64 50	
	<hr/>	
	\$49,053 27	

Pierce School.

Levi F. Warren, master	\$1,900 00	
Sarah A. Warren, head assistant	750 00	
Eliza E. Simmons, assistant	600 00	
M. Alice Warren, assistant	375 00	
Annie E. Merritt, assistant	537 50	
Nora Taft, assistant	187 50	
Martha M. Dix, assistant	36 00	
	<hr/>	
	\$53,439 27	

Davis School.

Ella G. Bates, principal	\$468 75	
M. Alice Warren, principal	281 25	
Helen S. Tolman, assistant	600 00	
Sarah E. Foster, assistant	600 00	
Mary E. Wall, assistant	312 50	
Alice M. Wormwood, assistant	187 50	
	<hr/>	
	\$55,889 27	

Franklin School.

Elizabeth F. Paddock, principal	\$750 00	
Lulu M. Bagley, assistant	600 00	
	<hr/>	
<i>Amounts carried forward</i>	\$57,239 27	\$102,837 66

<i>Amounts brought forward .</i>	\$57,239 27	\$102,837 66
Margaret A. Mague, assistant . . .	600 00	
Clara H. Thompson, assistant . . .	565 00	
	<hr/>	
	\$58,404 27	

Barnard School.

Calista S. Wood, principal . . .	\$750 00	
Susan E. Copeland, assistant . . .	600 00	
Lizzie F. Jones, assistant . . .	600 00	
	<hr/>	
	\$60,354 27	

Williams School.

John O. Godfrey, master . . .	\$1,570 00	
Elizabeth A. Pinnock, head assistant,	750 00	
Dora A. Allen, assistant . . .	600 00	
Ann B. Smith, assistant . . .	600 00	
Harriette S. Bachelder, assistant . .	568 75	
Caroline Y. Wentworth, assistant . .	518 75	
Hattie A. Ingraham, assistant . . .	224 25	
Mary Noble, assistant . . .	450 00	
Edith A. Mattison, assistant . . .	187 50	
Mary C. Latta, assistant . . .	157 12	
Belle M. Hall, assistant . . .	12 50	
	<hr/>	
	\$65,993 14	

Hamilton School.

Luther E. Leland, master . . .	\$1,900 00	
Anna G. Swain, head assistant . . .	665 62	
Ellen M. Leland, assistant . . .	600 00	
Hilma M. Ekman, assistant . . .	568 75	
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<i>Amounts carried forward .</i>	\$69,727 51	\$102,837 66
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Amounts brought forward . \$69,727 51 \$102,837 66

Prospect School.

Charles E. Hussey, master . . .	\$1,737 50	
Martha L. Perkins, head assistant .	750 00	
Ella F. Crooker, assistant. . .	600 00	
Lucy A. Hayward, assistant . . .	600 00	
Lizzie W. Everett, assistant . . .	600 00	
Mary P. Fanning, assistant . . .	600 00	
	<hr/>	
	\$74,615 01	

Hyde School.

George A. Moore, master . . .	\$1,900 00	
Charlotte E. Cameron, head assistant,	750 00	
Gertrude Blackmer, assistant . . .	600 00	
Phebe E. Churchill, assistant . . .	600 00	
Blanche G. Wetherbee, assistant . .	568 75	
N. Grace Gould, assistant . . .	302 50	
Harriet J. Brooks, assistant . . .	187 50	
Mary H. Jewett, assistant . . .	67 50	
	<hr/>	
	\$79,591 26	

Mason School.

Albert L. Harwood, master . . .	\$1,900 00	
Ellen S. Baker, head assistant . . .	750 00	
Maria F. Wood, assistant. . .	600 00	
Roberta J. Hardie, assistant . . .	600 00	
Mary Tenney, assistant . . .	600 00	
Georgia P. Bucknam, assistant . .	568 75	
	<hr/>	

Amounts carried forward . \$84,610 01 \$102,837 66

<i>Amounts brought forward</i>	\$84,610 01	\$102,837 66
Mary E. Mason, assistant.	375 00	
Jennie P. Morehouse, assistant	195 00	
Anna C. Bush, assistant	30 00	
	<hr/>	
	\$85,210 01	

Rice School.

Myra A. Wilson, principal	\$468 75	
Mary E. Mason, principal.	281 25	
Margaret Martin, assistant	600 00	
Ellen M. Cook, assistant	375 00	
Addie L. Thompson, assistant	518 75	
S. Emma Thompson, assistant	225 00	
	<hr/>	
	\$87,678 76	

Oak Hill School.

Louise N. Burbank, principal	\$750 00	
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Thompsonville School.

Helen A. Davis, principal	\$750 00	
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Janitors.

John Cummings, High	\$850 34	
John McCammon, Bigelow and Underwood	300 00	
Charles R. Young, Bigelow and Underwood	384 00	
	<hr/>	

<i>Amounts carried forward</i>	\$90,713 10	\$102,837 66
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<i>Amounts brought forward .</i>	\$90,713 10	\$102,837 66
Honora Sweeney, Lincoln	118 00	
James Dunn, Eliot	258 00	
Mary Welch, Jackson	336 00	
Mary Delaney, Adams	344 00	
John Dorney, Claflin	360 00	
Thomas Johnson, Peirce and Davis .	576 00	
Bridget Cox, Franklin	260 00	
John Woody, Barnard	260 00	
Martin Walsh, Williams	460 00	
James H. Boit, Hamilton	270 00	
Joshua L. Randall, Prospect . . .	370 00	
Enoch Houston, Hyde	350 00	
Thomas Woodman, Mason	126 00	
Thomas G. Woodman, Mason	144 00	
Albert C. Marston, Mason and Rice .	440 00	
John Mohr, Thompsonville	96 00	
Herman Esty, Oak Hill	61 00	
Michael W. Mullen, Oak Hill . . .	45 00	
	<hr/>	
	\$95,587 10	

Fuel.

Albert Brackett, coal	\$4,197 26
C. F. Eddy & Co., coal	2,693 79
Almshouse Department, wood . .	337 50
	<hr/>
	\$7,228 55

Total, as per item No. 41 of expenses .	<hr/>	\$102,815 65
Balance unexpended, transferred into excess and deficiency account		\$22 01

School Incidentals.

Appropriation	\$12,000 00	
Transferred to appropriation for evening schools by order of City Council	100 00	
	<hr/>	\$11,900 00
Adams & Ingraham, books, station- ery, etc.	\$2,495 21	
William Ware & Co., books . . .	435 85	
Harrison Hume, books	205 78	
Roberts Brothers, books	194 25	
D. Appleton & Co., books . . .	186 27	
D. C. Heath & Co., books . . .	130 06	
F. N. Ambrose, books	119 46	
Ginn & Co., books	112 70	
Lee & Shepard, books	112 46	
Carl Schoenhof, books	75 76	
Charles H. Whiting, books . . .	67 92	
Warren P. Adams, books	54 99	
Boston School Supply Co., books .	49 85	
Willard Small, books	49 61	
Harper Brothers, books	41 48	
Clark & Maynard, books	32 25	
Ticknor & Co., books	21 84	
Van Antwerp, Bragg, & Co., books .	21 75	
H. T. Sladen, books	16 50	
Houghton, Mifflin, & Co., books .	10 65	
Charles W. Seaver, books	5 40	
Leach, Sherwill, & Sanborn, books .	5 00	
	<hr/>	
<i>Amounts carried forward . . .</i>	<i>\$4,445 04</i>	<i>\$11,900 00</i>

<i>Amounts brought forward</i>	\$4,445 04	\$11,900 00
Frank E. Lovell & Co., books	1 75	
J. D. F. Brooks, binding books	234 00	
Martin C. Laffie, services as truant officer, etc.	478 78	
George H. Pratt, printing school reports, etc.	391 70	
J. A. Swasey, blackboards, etc.	346 99	
Water Department, use of water	246 14	
B. A. Fowler, charts	245 00	
Lawrence Industrial School, support of truants	242 87	
E. L. & F. S. Rollins, window shades	200 00	
E. Howard Watch & Clock Co., clocks	145 15	
Newton Odorless Excavating Company, cleaning vaults	145 00	
William Read & Sons, muskets	163 25	
Holden Book Cover Co., book covers	103 75	
J. H. Daniels, diplomas, etc.	103 95	
Newton & Watertown Gas Light Company, gas	79 35	
Miss A. V. Bunker, services in laboratory	78 35	
Thomas Emerson, travelling expenses	69 70	
George E. Bridges, taking census of children from 5 to 15	75 00	
A. G. Whitcomb, furniture	596 15	
<i>Amounts carried forward</i>	\$8,391 62	\$11,900 00

<i>Amounts brought forward .</i>	\$8,391 62	\$11,900 00
Smith & Co., furniture	90 00	
Joel Goldthwait & Co., rugs . . .	65 00	
Daniels' Nonantum Stables, use of teams	76 50	
S. F. Cate, use of teams	24 00	
Howland & Churchill, care of clocks,	46 50	
L. D. Whittemore, Jr., care of clocks,	23 00	
J. B. Turner, postage	25 87	
Ellen M. Bond, car fares	45 79	
Mary Noble, car fares	14 06	
Julia Grant, car fares	12 20	
Mary E. Wall, car fares	6 00	
Sarah L. Dix, car fares	2 00	
F. H. Hunting, expressage	25 00	
Neil McGinnis, expressage	4 05	
George L. Pearson, expressage . . .	4 00	
C. H. Jenison, expressage	2 00	
American Express Co., expressage .	1 20	
Allen & Kenway, services as archi- tects	42 73	
George H. Brown, tuning pianos . .	24 00	
Hallet, Davis, & Co., tuning pianos,	6 00	
W. B. Beal, moving piano	2 00	
High School Chorus, appropriation .	25 00	
Silver Rogers & Co., maps	19 75	
Thompson & Odell, repairing drums, etc.	18 95	
R. H. Stearns & Co., supplies . . .	15 00	
<i>Amounts carried forward .</i>	<u>\$9,012 22</u>	<u>\$11,900 00</u>

<i>Amounts brought forward</i> .	\$9,012 22	\$11,900 00
Jordan, Marsh, & Co., supplies .	12 03	
C. A. Browning & Co., supplies .	6 13	
Henry McElwin, repairing black- boards	15 00	
George M. Bridges, services in armory	13 50	
Henry M. Burr, incidental expenses .	9 90	
F. N. Brown, supplies	8 00	
White Line Transit Co., freight .	3 65	
William F. O'Conner, printing .	3 00	
Higgins & Nickerson, material and labor	476 18	
Milo Lucas, material and labor .	259 87	
Moses Pond & Co., material and labor	245 00	
G. M. D. Fernald, material and labor,	162 50	
Henry F. Ross, material and labor .	150 05	
Henry F. Wellington, material and labor	58 76	
James Dorney, material and labor .	57 50	
Isaac Smith, material and labor .	44 10	
J. D. Billings, material and labor .	32 78	
William F. Soule, material and labor,	27 90	
James Dunn, material and labor .	20 77	
J. F. Horrigan, material and labor .	15 50	
L. H. Cranitch, material and labor .	8 45	
O. F. Lucas, material and labor .	16 12	
J. O. Evans' Sons, material and labor,	7 00	
<i>Amounts carried forward</i> .	\$10,665 91	\$11,900 00

<i>Amounts brought forward .</i>	\$10,665 91	\$11,900 00
T. J. Hartnett, material and labor .	6 90	
A. G. Nickelson, material and labor .	4 50	
M. Taffe, material and labor . . .	4 50	
J. E. Cousens, material and labor .	3 80	
Thomas Johnson, material and labor,	3 75	
Sydney G. Steeves, material and		
labor	3 68	
J. C. Farrar, material and labor .	2 25	
Holden Manufacturing Co., book		
covers	14 47	
Mrs. A. A. Wilcox, repairing chairs .	6 00	
Educational Supply Co., supplies .	447 57	
Peabody & Whitney, supplies . .	205 99	
William C. Gaudet, supplies . .	116 02	
O. B. Leavitt, supplies	80 05	
Codman & Shurtleff, supplies . .	73 66	
Alfred P. Gage, supplies . . .	68 17	
George S. Perry, supplies . . .	44 70	
Crosby & Barton, supplies . .	36 90	
Barber Brothers, supplies . . .	27 25	
George Frost & Co., supplies . .	8 25	
Howard B. Coffin, supplies . .	7 84	
Clafin, Larrabee, & Co., supplies .	5 39	
A. H. Hews & Co., supplies . .	4 75	
O. F. Lucas, supplies	4 63	
A. L. Gordon, supplies	4 50	
W. O. Knapp & Co., supplies . .	4 50	
Joseph Zeller, supplies	4 41	
<i>Amounts carried forward .</i>	\$11,860 34	\$11,900 00

<i>Amounts brought forward</i>	\$11,860 34	\$11,900 00
I. R. Stevens, supplies	4 44	
Greenwood & Co., supplies	4 37	
A. E. Brickett, supplies	3 84	
Bernard Billings, supplies	2 25	
D. F. Healy, supplies	3 99	
Sundry small bills	19 20	

Total, as per item No. 42 of expenses	\$11,898 43
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Balance unexpended, transferred into excess and deficiency account	\$1 57
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Sinking Fund — City Debt.

Appropriation	\$21,500 00
Amount paid commissioners of sinking fund, as per item No. 43 of expenses	21,500 00

Sinking Fund — School Loan.

Appropriation	\$4,500 00
Amount paid commissioners of sinking fund, as per item No. 44 of expenses	4,500 00

Sinking Fund — Water Bonds.

Appropriation	\$20,000 00
Amount paid commissioners of sinking fund, as per item No. 45 of expenses	20,000 00

Sinking Fund — Public Park Loan.

Amount paid the commissioners of the sinking funds of the City of Newton, in accordance with section 5, chapter 44 of the Acts of 1882, being a portion of the amount received from sundry persons on account of betterments assessed for laying out and locating Farlow Park, as per item No. 46 of expenses \$1,512 15

State Aid.

Appropriation		\$1,000 00
Joshua V. Ramsdell	\$72 00	
William Watson	72 00	
Anna C. Boyd	48 00	
Sarah Fell	48 00	
Margaret Hagarty	48 00	
George Hutchinson	48 00	
Catherine McAleer	48 00	
Agnes Myers	48 00	
Mary A. Mann	48 00	
Thomas Probert	48 00	
Ellen Russell	48 00	
Bridget A. Wright	48 00	
Amelia M. Young	44 00	
Thomas Dolan	39 00	
Albert C. Dearborn	36 00	
Sarah W. White	30 00	
Hugh Hamill	28 00	
<hr/>		
<i>Amounts carried forward . . .</i>	\$801 00	\$1,000 00

<i>Amounts brought forward</i>	.	.	\$801 00	\$1,000 00
Thomas Dennon	.	.	28 00	
S. C. Spaulding	.	.	24 00	
Mary Duran	.	.	24 00	
Jane C. Poor	.	.	20 00	
Eliza M. Jackson	.	.	16 00	
Elizabeth A. McCrellis	.	.	12 00	
Almira Messer	.	.	12 00	
Elizabeth Ross	.	.	8 00	

Total, as per item No. 47 of expenses	.	\$945 00
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Balance unexpended, transferred into excess and deficiency account	.	.	\$55 00
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Street-Light Department.

Appropriation	.	.	\$22,000 00	
Additional appropriation by order of City Council	.	.	2,000 00	
			<hr/>	\$24,000 00
Newton and Watertown Gaslight Co., gas and care of lamps,			\$12,909 26	
Newton and Watertown Gaslight Co., oil and care of lamps	.	.	5,291 24	
Newton Electric Light and Power Co., for seventy-one arc lights	.	.	4,976 75	
Newton and Watertown Gaslight Co., glass, repairs, setting and painting posts	.	.	185 68	
			<hr/>	
<i>Amounts carried forward</i>	.		\$23,362 93	\$24,000 00

<i>Amounts brought forward</i>	\$23,362 93	\$24,000 00
Davis & Farnum Manufacturing Co.,		
iron posts and frames	359 50	
Nathaniel Tufts, copper lanterns, etc.	120 76	
Thomas Hart, for lighting Auburn-		
dale Tunnel, setting and paint-		
ing posts	80 00	
C. A. Gowell, setting posts	11 50	
W. J. Towne, oil and care of lamp	10 50	
Stephen F. Cate, use of teams	13 00	
S. P. Whitman, agent, use of teams	12 00	
Daniels' Nonantum Stables, use of		
teams	7 00	
Newton Journal, advertising	7 50	
Boston Daily Advertiser, advertising,	6 00	
Newton Graphic, advertising	5 63	
J. E. Trowbridge, material and labor,	2 95	
S. D. Garey, material and labor	1 50	
E. Jones, expressage	1 25	
<hr/>		
Total, as per item No. 48 of expenses	.	\$24,002 02
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Amount overdrawn, transferred into excess and		
deficiency account	.	\$2 02

Suspense Account.

Paid to R. J. Adams from amount in city		
treasury subject to call, as per item No.		
49 of expenses	.	\$40 00

Taxes 1887 — County.

Amount assessed for county tax	\$17,423 38
Amount paid to county treasurer as per item No. 50 of expenses	17,423 38

Taxes 1887 — Corporation.

Amount paid to Commonwealth of Massachusetts, as per item No. 51 of expenses	\$2 22
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Taxes 1887 — National Bank.

Amounts paid to Commonwealth of Massachusetts for non-residents of Newton, National Bank shares, as per item No. 52 of expenses	\$1,609 80
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Taxes 1887 — State.

Amount assessed for State tax	\$37,260 00
Amount paid to State treasurer, as per item No. 53 of expenses	37,260 00

Temporary Loans — 1887.

June 27, paid Commonwealth of Massachusetts	\$30,000 00
July 7, paid Suffolk National Bank .	30,000 00
July 8, paid National Hide and Leather Bank	20,000 00
Nov. 2, paid Commonwealth of Massachusetts	30,000 00
<hr/>	
<i>Amount carried forward .</i>	<i>\$110,000 00</i>

<i>Amount brought forward</i>	.	\$110,000	00
Nov. 2, paid National Bank of Re-			
demption	.	.25,000	00
Nov. 4, paid Commonwealth of Mas-			
sachusetts	.	.25,000	00
Nov. 5, paid Commonwealth of Mas-			
sachusetts	.	.60,000	00
Nov. 5, paid Nantucket Institution			
for Savings	.	6,000	00
Nov. 8, paid Commonwealth of Mas-			
sachusetts	.	.50,000	00
Nov. 8, paid National Bank of Re-			
demption	.	.25,000	00
Nov. 9, paid New England Trust Co.		25,000	00
Nov. 9, paid Nantucket Institution			
for Savings	.	5,000	00
Nov. 19, paid commissioners of the			
sinking funds of the City of			
Newton	.	.13,000	00
Dec. 1, paid trustees of the Read			
Fund	.	.39,700	00
Dec. 5, paid National Hide and			
Leather Bank	.	.50,000	00
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Total, as per item No. 54 of expenses	.	\$433,700	00

Thompsonville Schoolhouse, Land for.

Amount paid for land on Station Street, as			
per item No. 55 of expenses	.		\$487 50

Water Construction.

Total expenditure to Dec. 31, 1886 . . .	\$1,043,509 06	
Pay-roll of laborers	\$19,772 78	
Warren Foundry and Machine Co., iron pipe	19,578 26	
National Meter Co., meters and re- pairs	13,948 40	
Charles Carr, hydrants, etc. . . .	4,310 96	
Davis & Farnum Mfg. Co., castings .	2,516 16	
Boston & Albany R.R. Co., freight .	1,881 06	
Fuller, Dana & Fitz, lead	1,758 46	
Chadwick Lead Works, lead	1,256 74	
W. H. Ward & Co., supplies	1,632 09	
City Iron Foundry, gate-boxes, etc. .	1,421 74	
Frederick Tudor, steam heating apparatus	1,300 00	
Walworth Manuf. Co., supplies . . .	1,187 42	
Chapman Valve Manufacturing Co., water-gates, etc.	1,040 89	
Timothy Stuart, carting pipe, etc. .	663 98	
A. G. Tupper, material and labor . .	650 00	
A. F. Harrington, use of teams . . .	430 50	
J. C. Whitney, services as inspector,	407 57	
H. H. Hunt, meter boxes, etc. . . .	330 00	
N. W. Tupper, grain, etc.	264 98	
George A. Goodyear, powder, etc. . .	191 80	
Henry F. Jenks, drinking fountains .	196 50	
John Joyce, labor, men, and teams .	175 35	
J. H. Cunningham, supplies	177 83	
<i>Amounts carried forward</i>	<u>\$75,093 47</u>	<u>\$1043,509.06</u>

<i>Amounts brought forward .</i>	\$75,093 47	\$1043,509.06
American Fire Hose Manufacturing		
Co., hose, etc.	139 70	
Chalmers-Spence Co., supplies	104 42	
M. W. Sands, brick	103 40	
J. C. Farrar, blacksmithing	154 93	
A. Danforth, agent, blacksmithing	151 21	
B. F. Barlow, blacksmithing	148 53	
Charles A. Cole, blacksmithing	134 96	
S. D. Keegan, blacksmithing	128 92	
Andrew Peters, blacksmithing	27 89	
Thomas Belger, blacksmithing	23 89	
Murray & Farrell, blacksmithing	16 35	
F. H. Hunting, expressage	80 00	
E. Jones, expressage	18 92	
George F. Blake Manufacturing Co.,		
use of pump	75 00	
Arthur Muldoon, labor	72 00	
Thomas McKinley, inspecting pipe	70 00	
Gilkey & Stone, lumber	53 55	
Sewall & Day Cordage Co., manilla,		
etc.	51 68	
Jenkins Brothers, packing	40 11	
M. Frank Lucas, lumber, etc.	50 96	
Parker, Wood, & Co., supplies	48 45	
Henry Brooks & Co., globes, etc.	31 25	
Parker, Holmes, & Co., rubber boots,	27 52	
Edson Manufacturing Co., hose	25 70	
Union Water Meter Co., repairing		
meters	25 50	
<i>Amounts carried forward .</i>	\$76,898 31	\$1043,509.06

<i>Amounts brought forward</i> .	\$76,898 31	\$1043,509.06
Page & Coffin, supplies . . .	23 23	
Newton and Watertown Gaslight		
Co., gas	22 92	
Cobb, Bates, & Yerxa, oatmeal .	22 00	
Sandwich Glass Co., supplies . .	22 90	
Isaac Smith, material and labor .	98 81	
Higgins & Nickerson, material and		
labor	49 00	
E. W. Hodgson, material and labor .	16 00	
John Atkinson, material and labor .	12 45	
W. Rand, material and labor . . .	12 25	
Pettee Machine Works, material and		
labor	10 61	
O. B. Leavitt, material and labor .	8 20	
P. Y. Hoseason, material and labor .	6 00	
J. F. Horrigan, material and labor .	3 00	
W. W. White & Co., plans	19 80	
Brooks, Baldwin, & Robbins, lanterns		
and globes	19 00	
S. F. Cate, use of teams	18 75	
Central Stables, use of teams . . .	6 40	
J. R. McLaughlin, care of sick horses,	17 50	
M. Bunker, care of sick horses . .	14 50	
E. Smead & Co., grain, etc. . . .	17 19	
M. B. Douglass, hay	13 80	
Alden Speare's Sons & Co., oil . . .	10 88	
Speare, Gregory, & Co., oil	3 24	
Alfred Fitzpatrick, sawdust	8 00	
C. F. Eddy & Co., cement	6 40	
<i>Amounts carried forward</i> .	\$77,361 14	\$1043,509.06

Amounts brought forward . \$77,361 14 \$1043,509.06

Hunt & Russell, agent, rubber coat		
and boots	6 25	
Waldo Brothers, cement	5 00	
M. H. Taylor, typewriting . . .	4 81	
J. G. Dolby, step-ladder	3 50	
F. K. Kingman, oil-coat	1 50	
New York & New England R.R.,		
freight	1 05	
R. J. McAdoo, expressage	25	
H. N. Hyde, Jr., sundry cash ex-		
penses	9 65	
J. C. Whitney, sundry cash expenses,	4 00	
Albert S. Glover, sundry cash ex-		
penses	2 20	
C. W. Morehouse, supplies	19 30	
Dodge, Haley, & Co., supplies . .	17 32	
Ward & Curley, supplies	16 80	
C. S. Knowles, supplies	13 13	
A. A. Savage, supplies	12 36	
A. J. Wilkinson & Co., supplies . .	12 31	
Hooper, Lewis, & Co., supplies . .	7 00	
Aug. Williams, supplies	3 98	
The Armstrong Mfg. Co., supplies .	2 98	
National Tube Works, supplies . .	2 88	
J. L. Fairbanks & Co., supplies . .	2 00	
Sherburne & Co., supplies	1 87	

Total, as per item No. 56 of
 expenses \$77,511 28

Amounts carried forward . \$77,511 28 \$1043,509.06

Amounts brought forward . \$77,511 28 \$1,043,509.06

Received.

From Newton Mills, for piping, etc., fire ser- vice	\$843 00	
From Nonantum Worsted Co., for piping, etc., fire service . . .	228 45	
For main pipe, etc., Far- low Park	387 65	
From Chadwick Lead Works, reels returned,	13 60	
From H. S. Macomber, oil barrels returned .	5 36	
From sale of meter-boxes .	1 15	
<hr/>		
Total, as per item No. 46 of receipts	\$.1,479 21	
	<hr/>	\$76,032 07
Total expenditure to Dec. 31, 1887 .		\$1,119,541 13

Water Maintenance.

Appropriation		\$14,000 00
Albert S. Glover, services as water registrar	\$.1,788 62	
Albert S. Glover, incidental cash expenses	91 33	
H. N. Hyde, Jr., services as superin- tendent	1,490 55	
<hr/>		
<i>Amounts carried forward</i>	\$3,370 50	\$14,000 00

<i>Amounts brought forward .</i>	\$3,370 50	\$14,000 00
H. N. Hyde, Jr., incidental cash expenses	32 19	
J. C. Whitney, services as inspector .	784 74	
J. C. Whitney, incidental cash expenses	4 00	
Thomas Coughlan, services as engineer	1,192 39	
Thomas Crocker, services as fireman (in part)	57 70	
Miss E. D. Hinckley, clerical services,	366 46	
Miss Rosalie Ames, clerical services .	124 27	
Miss E. B. Baylies, clerical services .	65 00	
Miss Emma Nickerson, clerical services	18 41	
Miss J. A. Baylies, services as typewriter	10 00	
Pay-rolls of laborers	3,213 18	
J. W. Mitchell, coal	2,835 70	
Albert Brackett, coal	44 18	
J. B. Simmons, one brown horse .	250 00	
Childs & Coolidge, one bay horse .	185 00	
N. W. Tupper, hay and grain . .	75 10	
E. Smead & Co., hay and grain .	5 74	
B. F. Barlow, new wagon . .	156 00	
E. W. Hodgson, new harness . .	60 00	
T. Albert Ward, care of reservoir .	50 00	
Hartford Steam Boiler Inspection and Insurance Co., policy of insurance	50 00	
<i>Amounts carried forward .</i>	<u>\$12,950 56</u>	<u>\$14,000 00</u>

<i>Amounts brought forward .</i>	\$12,950 56	\$14,000 00
Timothy Stuart, labor, men, and teams	46 23	
A. F. Harrington, use of teams .	68 00	
Stephen F. Cate, use of teams .	52 75	
John T. Hill, use of teams . .	6 30	
F. H. Hunting, expressage . .	15 80	
C. H. Jenison, expressage . .	3 75	
E. Jones, expressage	2 75	
Rockwell & Churchill, blank books, etc.	23 50	
J. C. Clark Printing Co., blank books, etc.	32 37	
Hooper, Lewis, & Co., blank books, etc.	27 15	
Fanning Printing Co., printing, etc.	33 13	
Newton Journal, printing, etc. .	21 25	
"Newton Graphic," printing, etc. .	16 75	
William F. O'Connor, printing .	2 50	
Pettee Machine Works, material and labor	114 38	
George B. Randall, material and labor	92 50	
Isaac Smith, material and labor .	23 64	
Edward Pike, material and labor .	6 65	
J. F. Horrigan, material and labor .	6 56	
E. W. Hodgson, material and labor .	5 37	
P. Y. Hoseason, material and labor .	2 00	
B. F. Barlow, blacksmithing . .	28 27	
<i>Amounts carried forward .</i>	\$13,582 16	\$14,000 00

<i>Amounts brought forward .</i>	\$13,582 16	\$14,000 00
Murray & Farrell, blacksmithing .	3 48	
D. J. O'Donald, blacksmithing .	2 75	
Thomas Belger, blacksmithing .	1 50	
A. Danforth, agent, blacksmithing .	1 00	
Davis & Farnum Mfg. Co., castings .	30 61	
M. Frank Lucas, stakes, etc. . .	30 61	
Newton & Watertown Gaslight Co., gas, etc.	10 43	
Sherburne & Co., waste, etc. . .	9 86	
Jenkins Brothers, packing . .	8 97	
C. S. Knowles, packing . . .	4 10	
American Steam Packing Co., pack- ing	3 75	
J. S. F. Huddleston, thermometers .	6 00	
John Viles, use of buggy . . .	6 00	
J. R. McLaughlin, care of sick horses,	5 83	
Madison Bunker, care of sick horses,	4 83	
Joseph Zeller, shades . . .	5 56	
Chapman Valve Mfg. Co., valves .	4 90	
N. B. Douglass, hay	4 60	
F. E. Hamblin, drain pipe . .	4 50	
Cobb, Bates, & Yerxa, oatmeal .	2 75	
Dr. H. B. Stoddard, professional ser- vices	2 50	
H. W. Calder, repairing office chairs,	2 50	
Boston & Albany R.R., freight .	2 27	
Morss & Whyte, copper netting .	2 00	
C. F. Eddy & Co., cement . .	1 60	
<i>Amounts carried forward .</i>	\$13,745 06	\$14,000 00

<i>Amounts brought forward</i> .	\$13,745 06	\$14,000 00
Drew, Allis, & Co., Newton Direc-		
tory	1 50	
Charles Carr, supplies . . .	94 85	
H. W. Leach, supplies . . .	23 30	
Joseph Lee, supplies . . .	19 25	
A. R. Gay & Co., supplies . .	12 55	
Walworth Manuf. Co., supplies .	10 37	
A. A. Savage, supplies . . .	10 32	
J. A. & W. Bird & Co., supplies .	9 27	
Page & Coffin, supplies . . .	8 02	
C. W. Morehouse, supplies . .	6 80	
O. B. Leavitt, supplies . . .	5 11	
Edson Manuf. Co., supplies . .	4 18	
Dodge, Haley, & Co., supplies .	4 07	
L. H. Cranitch, supplies . . .	3 90	
W. H. Ward & Co., supplies . .	3 38	
A. W. Snow, supplies . . .	3 29	
Library Bureau, supplies . . .	4 00	
A. J. Wilkinson & Co., supplies .	1 83	
H. W. Wellington, supplies . .	1 35	
Aug. Williams, supplies . . .	1 33	
Sundry small bills	98	

Total, as per item No. 57 of expenses .	\$13,974 71
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Balance unexpended, transferred into excess and deficiency account	<u><u>\$25 29</u></u>
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Water Meters and Service Pipe.

Appropriation		\$4,000 00
Pay-rolls of laborers	\$1,736 69	
Fuller, Dana, & Fitz, lead pipe, etc.,	1,255 75	
Chadwick Lead Works, lead pipe,		
etc.	39 51	
W. H. Ward & Co., supplies . . .	247 84	
N. W. Tupper, grain, etc. . . .	150 07	
Union Water Meter Co., repairing		
meters	124 95	
H. R. Worthington, supplies . . .	119 85	
National Meter Co., repairing meters,		
etc.	72 25	
B. F. Barlow, blacksmithing . . .	47 17	
Murray & Farrell, blacksmithing .	6 95	
A. Danforth, agent, blacksmithing .	1 00	
C. A. Cole, blacksmithing	75	
The Mason Regulator Co., valve . .	22 00	
Ward & Curley, supplies	18 33	
Boston & Albany R.R., freight . .	16 87	
Page & Coffin, supplies	15 48	
J. R. McLaughlin, attendance on sick		
horse	11 67	
Madison Bunker, attendance on sick		
horses	9 67	
E. Smead & Co., grain	11 46	
Pettee Machine Works, material and		
labor	11 05	
E. W. Hodgson, material and labor .	10 68	
<i>Amounts carried forward</i>	<i>\$3,929 99</i>	<i>\$4,000 00</i>

<i>Amounts brought forward</i> . . .	\$3,929 99	\$4,000 00
A. R. Gay & Co., supplies . . .	10 50	
N. B. Douglass, hay	9 20	
J. C. Whitney, sundry cash expenses,	8 98	
H. N. Hyde, Jr., sundry cash ex-		
penses	2 38	
A. S. Glover, sundry cash expenses .	1 40	
R. M. Lucas, serving notices . . .	7 00	
M. C. Laffie, serving notices . . .	6 00	
Robert Harrison, serving notices . .	4 00	
C. P. Heustis, serving notices . . .	3 00	
P. Y. Hoseason, material and labor .	4 00	
Jenkins Brothers, packing	3 50	
A. F. Harrington, use of team	3 00	
M. C. Higgins, material and labor . .	2 79	
Aug. Williams, supplies	2 65	
C. W. Morehouse, supplies	40	

Total, as per item No. 58 of expenses . .	\$3,998 79
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Balance unexpended, transferred into excess and deficiency account	\$1 21
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Water Rebate.

Appropriation	\$500 00
Paid to sundry parties rebate of water bills, as per item No. 59 of expenses	363 05

Balance unexpended, transferred into excess and deficiency account	\$136 95
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Watering Streets, and Water for Same.

Appropriation	\$5,500 00	
Additional appropriation, by order of		
City Council	250 00	
	<hr/>	\$5,750 00
Water Department, use of water .	\$1,975 04	
Timothy Stuart, for watering, Wards		
1 and 7	1,155 83	
W. H. Mague, for watering, Wards		
3 and 4	1,110 00	
Central Stables, for watering, Ward 2,	643 36	
Thomas R. Frost, for watering,		
Ward 6	588 36	
John P. Keating, for watering,		
Ward 5	212 50	
John A. Kenrick, treasurer Highway		
Department	77 42	
	<hr/>	
Total, as per item No. 60 of expenses .		\$5,762 51
		<hr/>
Balance overdrawn, transferred into excess and		
deficiency account		\$12 51

Water—Use of Hydrants.

Appropriation	\$9,540 00	
Amount paid Water Department, as per item		
No. 61 of expenses	9,420 00	
	<hr/>	
Balance unexpended, transferred into excess		
and deficiency account		\$120 00

SCHEDULE OF CITY PROPERTY, REAL AND PERSONAL

Almshouse Department.

Seventy acres of land	\$7,000 00	
Buildings	8,000 00	
Personal property	3,947 35	
	<u> </u>	\$18,947 35

Armory Hall.

Land, building, fixtures, etc.	\$12,000 00
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City Hall Department.

City Hall furniture and fixtures,	\$50,000 00	
City seal	25 00	
City stamps	35 00	
Reports, statutes, and special laws	300 00	
Set of standard weights and measures,	100 00	
Record books	200 00	
Bookcases, maps, etc.	500 00	
	<u> </u>	\$51,160 00

Cemetery Department.

Land in Newton Cemetery	\$2,000 00	
Tomb in Newton Cemetery	800 00	
	<u> </u>	\$2,800 00

City Engineering Department.

Two transits, \$150 each	\$300 00	
Three transits, \$100 each	300 00	
Two levels, \$100 each	200 00	
	<u> </u>	
<i>Amounts carried forward</i>	\$800 00	\$84,907 35

<i>Amounts brought forward</i>	.	.	\$800 00	\$84,907 35
Draughting materials	.	.	126 00	
Surveying materials	.	.	48 00	
Tools	.	.	50 00	
Horse, wagon, etc.	.	.	150 00	
Cases and furniture	.	.	300 00	
			<hr/>	\$1,474 00

Fire Department.

Steam fire engine No. 1, apparatus, horses, and furniture.	.	.	\$6,000 00	
Steam fire engine No. 2, apparatus, horses, and furniture.	.	.	6,000 00	
Steam fire engine No. 3, apparatus, horses, and furniture.	.	.	6,000 00	
Chemical Engine No. 1	.	.	2,250 00	
Hook and ladder, truck, horses, etc.	.	.	3,300 00	
Hose No. 4, horse, hose, reel, etc., Newtonville	.	.	1,200 00	
Hose No. 5, horse, hose, reel, etc., Auburndale	.	.	1,200 00	
Hose No. 6, horse, hose, reel, etc., Lower Falls	.	.	1,500 00	
Hose No. 7, hose-carriage, horse, hose, etc., Upper Falls	.	.	\$1,500 00	
Fire-alarm telegraph, including team, etc.	.	.	25,300 00	
			<hr/>	\$54,250 00
<i>Amount carried forward</i>	.	.	.	\$140,631 35

Amount brought forward \$140,631 35

Fire and Highway Department Buildings.

Steam fire-engine house, stables and land, Ward 7	\$13,000 00	
Steam fire-engine house, stables and land, Ward 3	19,000 00	
Steam fire-engine house, stables and land, Ward 6	19,000 00	
Hook and ladder and hose No. 4, house, stables, and land . .	17,500 00	
Hose station No. 5, stables and land, Auburndale	5,200 00	
Hose station No. 6, stables and land, Lower Falls	6,900 00	
Hose station No. 7, stables and land, Upper Falls	7,000 00	
	<hr/>	\$87,600 00

Free Library Department.

Newton Free Library, building and land	\$68,000 00	
Books	10,000 00	
	<hr/>	\$78,000 00

Gravel and Gravel Lands.

Land on Jewett Street, Ward 1 .	\$2,000 00	
Land on California Street, Ward 1 .	6,600 00	
Land on Crafts Street, Ward 2 .	500 00	
Land on Watertown Street, Ward 2,	1,000 00	
	<hr/>	
<i>Amounts carried forward</i> .	\$10,100 00	\$306,231 35

<i>Amounts brought forward .</i>	\$10,100 00	\$306,231 35
Land on Auburndale Avenue, Ward 3,	1,200 00	
Land on Pine Street, Ward 3 . .	2,550 00	
Land on Pine Street, Ward 3 . .	2,000 00	
Land on Pine Street, Ward 3 . .	2,000 00	
Land on Pine Street, Ward 3 . .	1,200 00	
Land on Pine Street, Ward 3 . .	250 00	
Land on Pine Street, Ward 3 . .	550 00	
Land on Bourne Street, Ward 4 .	9,000 00	
Gravel on Washington Street, Ward		
4	600 00	
Gravel on Washington Street, Ward		
4	600 00	
Gravel on Walnut Street . . .	500 00	
Land on Elliot Street, Ward 5 . .	1,000 00	
Gravel on Parker Street, Ward 5 .	250 00	
Gravel on Pine Street	100 00	
Land east of Oak Street, Ward 5 .	1,200 00	
Land on Willow and Centre Streets,		
Ward 6	500 00	
Land on Florence Street, Ward 5 .	400 00	
Land on Florence Street, Ward 5 .	1,500 00	
Land on Homer Street, Ward 6 . .	4,000 00	
Land on Murray Street, Ward 2 .	4,000 00	
	<hr/>	\$43,500 00

Highway Department.

1 steam road roller	\$6,000 00	
22 cart horses, \$225	4,950 00	
	<hr/>	
<i>Amounts carried forward .</i>	\$10,950 00	\$349,731 35

<i>Amounts brought forward</i>	\$10,950 00	\$349,731 35
3 horses, \$100	300 00	
2 horses for superintendent of streets,	375 00	
26 double and single carts	2,600 00	
13 harnesses	850 00	
4 double sleds, \$200	800 00	
3 single sleds	100 00	
2 stone crushers and houses	4,600 00	
2 stone wagons, wagon, carriage, and sleigh	525 00	
Tools, chains, derricks, blankets, etc.	1,800 00	
1 road scraper	150 00	
Boiler for steam drill	500 00	
	<hr/>	\$23,550 00

Lighting Department.

For 1,369 posts, lanterns, burners, etc., \$10 apiece	\$13,690 00
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Police Department.

Station-house, building, and land, North Village	\$4,000 00	
Furniture and bedding	50 00	
Lock-up, furniture, and bedding, Ward 1	1,050 00	
Lock-up, furniture, and bedding, Ward 6	1,575 00	
Two carriages, sleigh, and harness	200 00	
Horse, saddle, bridle, and harness	200 00	
	<hr/>	
<i>Amounts carried forward</i>	\$7,075 00	\$386,971 35

<i>Amounts brought forward .</i>	\$7,075 00	\$386,971 35
22 pairs handcuffs, \$3.75	82 50	
30 clubs, \$1.50	45 00	
6 lanterns, \$2.50	15 00	
22 badges	137 00	
22 parade clubs and belts, \$3.50	77 00	
Blankets	50 00	
Record books	50 00	
Furniture in station at City Hall	75 00	
	<hr/>	\$7,606 50

School Department.

High School buildings, furniture and land	\$113,000 00
Mason Schoolhouse, furniture and land	49,100 00
Hyde Schoolhouse, furniture and land	24,500 00
Prospect Grammar Schoolhouse, fur- niture and land	31,000 00
Prospect Primary Schoolhouse, fur- niture and land	7,500 00
Oak Hill Schoolhouse, furniture and land	12,000 00
Hamilton Schoolhouse, furniture and land	28,000 00
Williams Schoolhouse, furniture and land	10,000 00
Williams New Schoolhouse and land, 35,000 00	

Amounts carried forward . \$310,100 00 • \$394,577 85

<i>Amounts brought forward .</i>	\$310,100 00	\$394,577 85
Pierce Schoolhouse, furniture and land . . . . .	. 32,000 00	
Davis Schoolhouse, furniture and land	13,000 00	
Franklin Schoolhouse, furniture and land . . . . .	. 15,000 00	
Claflin Schoolhouse, furniture and land . . . . .	. 35,000 00	
Adams Schoolhouse, furniture and land . . . . .	. 22,500 00	
Bigelow Schoolhouse, furniture and land . . . . .	. 44,000 00	
Underwood Schoolhouse, furniture and land . . . . .	. 24,000 00	
Lincoln Schoolhouse, furniture and land . . . . .	. 5,500 00	
Jackson Schoolhouse, furniture and land . . . . .	. 15,000 00	
Eliot Schoolhouse, furniture and land,	19,000 00	
Rice Schoolhouse and land . . . . .	. 20,000 00	
Barnard Schoolhouse, furniture and land . . . . .	. 21,000 00	
School apparatus . . . . .	. 5,000 00	
	<hr/>	\$581,100 00

Water Department.

Building for pipe-fitting, etc., stable, and land .	\$4,000 00
3 horses, wagons, harness, etc.	500 00
	<hr/>
	\$980,177 85

For cost of water-works, see water construction account.

TABLE showing the Number of Polls, Real and Personal Estate of the City, Amount of Tax, Rate per Cent, Appropriations, etc., for Twenty-Seven Years.

A.D.	Polls.	Real Estate.	Personal.	Total.	City, State, and County Tax.	Rate.	Appropriations.	Houses.
1861	2,056	\$5,614,285 00	\$1,955,835 00	\$7,600,120 00	\$57,804 88	\$7 20	\$47,500 00	1,330
1862	1,989	5,476,805 00	2,495,821 00	7,922,620 00	56,599 17	6 60	35,000 00	1,374
1863	1,911	5,504,307 00	2,988,195 00	8,492,562 00	64,968 65	7 20	40,000 00	1,399
1864	2,046	5,637,755 00	2,309,021 00	7,946,776 00	78,000 55	9 50	52,500 00	1,421
1865	2,118	5,750,185 00	3,390,075 00	9,146,260 00	113,991 12	12 00	60,000 00	1,438
1866	2,297	6,304,835 00	4,560,724 00	10,955,559 00	114,149 59	10 00	75,000 00	1,491
1867	2,438	7,227,285 00	4,995,127 00	12,222,412 00	153,990 88	12 20	95,000 00	1,552
1868	2,736	9,104,567 00	5,366,602 00	14,441,169 00	193,208 88	13 00	160,000 00	1,671
1869	2,937	10,288,610 00	5,634,266 00	15,922,876 00	188,990 46	11 50	150,000 00	1,826
1870	3,055	11,407,070 00	6,330,922 00	17,737,992 00	222,514 71	12 20	185,000 00	2,077
1871	3,199	12,770,420 00	6,615,593 00	19,386,013 00	223,521 32	11 20	185,000 00	2,220
1872	3,420	15,792,950 00	8,463,904 00	24,256,854 00	334,314 87	13 50	291,050 00	2,392
1873	3,659	18,446,275 00	7,537,775 00	25,984,050 00	384,089 84	14 50	333,300 00	2,523
1874	3,917	20,032,800 00	8,048,645 00	28,081,445 00	372,893 53	13 00	320,000 00	2,657
1875	4,089	21,073,495 00	7,882,374 00	28,955,869 00	399,085 46	13 50	351,000 00	2,876
1876	4,334	21,128,120 00	7,072,845 00	28,200,965 00	392,201 13	13 60	350,004 99	3,004
1877	4,045	20,007,025 00	6,627,488 00	26,634,513 00	370,319 38	13 60	402,200 00	3,057
1878	3,882	18,604,105 00	6,408,825 00	25,012,930 00	352,942 43	13 80	378,400 00	3,150
1879	4,010	17,450,655 00	6,830,697 00	23,787,352 00	326,959 64	13 40	367,850 00	3,178
1880	4,132	17,718,270 00	7,481,830 00	25,200,100 00	361,137 40	14 00	388,525 00	3,214
1881	4,336	18,238,510 00	8,169,763 00	26,408,273 00	379,434 18	14 00	416,505 00	3,257
1882	4,502	18,930,485 00	7,405,233 00	26,335,718 00	383,633 00	14 20	423,930 00	3,310
1883	4,661	19,794,805 00	7,329,283 00	27,124,088 00	427,033 59	15 40	488,120 00	3,381
1884	4,804	20,467,295 00	7,347,266 00	27,814,561 00	410,137 68	14 40	478,306 88	3,468
1885	4,984	21,134,820 00	7,865,000 00	28,999,820 00	415,965 48	14 00	475,400 00	3,542
1886	5,200	21,977,061 00	9,039,869 00	31,016,930 00	457,651 28	14 40	524,420 00	3,695
1887	5,671	23,081,866 00	9,196,441 00	32,277,307 00	511,613 38	15 80	562,080 00	3,856

TABLE.

Showing Amount Paid for Support of Poor out of Almshouse
from 1851 to 1887 Inclusive.

1851 . . .	\$138 56	1870 . . .	\$2,197 41
1852 . . .	104 94	1871 . . .	3,713 39
1853 . . .	45 70	1872 . . .	2,884 79
1854 . . .	38 10	1873 . . .	3,066 59
1855 . . .	73 63	1874 . . .	3,895 51
1856 . . .	135 49	1875 . . .	5,553 79
1857 . . .	204 96	1876 . . .	9,336 14
1858 . . .	387 61	1877 . . .	10,259 57
1859 . . .	358 25	1878 . . .	8,284 10
1860 . . .	500 81	1879 . . .	8,246 42
1861 . . .	757 14	1880 . . .	6,455 80
1862 . . .	781 50	1881 . . .	6,808 75
1863 . . .	632 27	1882 . . .	7,933 57
1864 . . .	605 02	1883 . . .	8,016 14
1865 . . .	870 77	1884 . . .	7,076 86
1866 . . .	643 72	1885 . . .	8,500 15
1867 . . .	1,268 08	1886 . . .	7,661 96
1868 . . .	1,464 53	1887 . . .	8,269 41
1869 . . .	2,019 28		

SALARIES OF CITY OFFICERS, 1887.

Mayor	\$1,000 00
City clerk	2,000 00
City treasurer and collector	3,000 00
Assistant treasurer and deputy collector	1,500 00
City auditor	2,000 00
City solicitor	1,250 00

Chairman of assessors	\$1,200 00
Two assessors, each	750 00
Assistant assessors, each per day	4 00
City messenger	1,100 00
Clerk of Common Council	200 00
Sealer of weights and measures	75 00

HIGHWAY DEPARTMENT.

Superintendent of streets, two horses and carriage furnished	\$1,500 00
City engineer	2,500 00

FIRE DEPARTMENT.

Chief of department, team furnished	\$1,500 00
Assistant chief and superintendent of Fire Alarm Telegraph, team furnished	1,000 00
Three engineers of steamers, each	950 00
Four drivers of steamers, and Hook and Ladder Co., each	750 00
Three drivers of hose-carriages, Nos. 1, 2, and 4, each	600 00
Eight foremen of steamers, and Hook and Ladder and Hose Co., each	110 00
Eight assistant foremen, and clerks of steamers, and Hook and Ladder and Hose Co., each,	105 00
Forty-eight hosemen and laddermen, each	100

POLICE DEPARTMENT.

City Marshal, team furnished	\$1,500 00
Captain of police	1,200 00
Sergeant of police, \$3 per day.	
Thirteen policemen, each	1,000 00
Two policemen	900 00
Two policemen	825 00
Two policemen	750 00
First year of service	750 00
Second year of service	825 00
Third year of service	900 00
Fourth and subsequent years	1,000 00

POOR DEPARTMENT.

Seven overseers of poor, each	\$50 00
City almoner and clerk of board	700 00
Warden of almshouse	700 00

WATER DEPARTMENT.

Water registrar	\$1,800 00
Superintendent of water-works, team furnished,	1,500 00
Inspector of meters and fixtures	1,200 00
Engineer at pumping station, with house-rent .	1,200 00
Fireman and watchman, pumping station, with house-rent	600 00

SCHOOLS.

Superintendent	\$2,800 00
One teacher	3,000 00
One teacher	2,200 00
One teacher	2,000 00
Seven teachers, at \$1,900	13,300 00
Three teachers, at \$1,800	5,400 00
One teacher	1,600 00
Two teachers, at \$1,500	3,000 00
Four teachers, at \$1,000	4,000 00
One teacher	950 00
One teacher	900 00
One teacher	800 00
Eighteen teachers, at \$750	13,500 00
Forty-eight teachers, at \$600	28,800 00
Four teachers, at \$550	2,200 00
Seven teachers, at \$500	3,500 00
Four teachers, at \$450	1,800 00
One teacher	400 00
Secretary of school committee	300 00

JANITORS.

One janitor	\$1,092 00
One janitor	768 00
One janitor	696 00
One janitor	624 00
One janitor	588 00
One janitor	456 00

OFFICERS
OF THE
NEWTON CITY GOVERNMENT,
1888.

MAYOR.

J. WESLEY KIMBALL.

Office Hour at City Hall:

3:30 P.M. Daily.

BOARD OF ALDERMEN.

President, GEORGE PETTEE.

WARD ONE.

EDWIN O. CHILDS.

WARD TWO.

N. HENRY CHADWICK.

WARD THREE.

JAMES H. NICKERSON.

WARD FOUR.

FREDERICK JOHNSON.

WARD FIVE.

GEORGE PETTEE.

WARD SIX.

JOHN WARD.

WARD SEVEN.

WARREN P. TYLER.

STANDING COMMITTEES.

Elections and Returns.

ALDERMEN.

GEORGE PETTEE.

JOHN WARD.

Enrolled Ordinances and Resolutions.

ALDERMEN.

WARREN P. TYLER.

EDWIN O. CHILDS.

STANDING COMMITTEES, BOARD OF MAYOR AND ALDERMEN.

Police.

THE MAYOR.

ALDERMEN.

FREDERICK JOHNSON.

WARREN P. TYLER.

Licenses Weights and Measures.

ALDERMEN.

FREDERICK JOHNSON.

N. HENRY CHADWICK.

Regular meetings of the Board, first and third Mondays of each month, 7.15 P.M.

Clerk of Board of Aldermen.

ISAAC F. KINGSBURY.

COMMON COUNCIL.

President, HEMAN M. BURR.

WARD ONE.

HERBERT H. POWELL.

ALBERT W. RICE.

WARD THREE.

LAWRENCE BOND.

HENRY H. HUNT.

WARD FIVE.

EBENEZER H. GREENWOOD.

FRANK J. HALE.

WARD TWO.

JOHN A. FENNO.

EDMUND T. WISWALL.

WARD FOUR.

THEODORE W. GORE.

EVERETT E. MOODY.

WARD SIX.

HEMAN M. BURR.

HENRY H. READ.

WARD SEVEN.

J. CHARLES KENNEDY.

EPHRAIM S. HAMBLIN.

STANDING COMMITTEES OF THE COMMON COUNCIL.

Enrolled Ordinances and Resolutions.

COUNCILMEN.

HERBERT H. POWELL.

EVERETT E. MOODY.

EBENEZER H. GREENWOOD.

Regular meetings of the Common Council, second and fourth Mondays of each month, 7.15 P.M.

Clerk of Common Council.

JOHN C. BRIMBLECOM.

JOINT STANDING COMMITTEES OF CITY COUNCIL.

Finance and Salaries.

ALDERMEN.

WARREN P. TYLER. EDWIN O. CHILDS.

COUNCILMEN.

President HEMAN M. BURR.

EVERETT E. MOODY. LAWRENCE BOND.

Accounts.

ALDERMEN.

FREDERICK JOHNSON. EDWIN O. CHILDS.

COUNCILMEN.

HERBERT H. POWELL. JOHN A. FENNO.
FRANK J. HALE.

Public Property.

ALDERMEN.

N. HENRY CHADWICK. JOHN WARD.

COUNCILMEN.

J. CHARLES KENNEDY. HENRY H. HUNT.
EBENEZER H. GREENWOOD.

State Aid, Soldiers' Relief, and Military Affairs.

ALDERMEN.

N. HENRY CHADWICK. JOHN WARD.

COUNCILMEN.

J. CHARLES KENNEDY. HERBERT H. POWELL.
EBENEZER H. GREENWOOD.

Fuel and Street Lights.

ALDERMEN.

JOHN WARD. JAMES H. NICKERSON.

COUNCILMEN.

THEODORE W. GORE. JOHN A. FENNO.
FRANK J. HALE.

Fire Department.

ALDERMEN.

GEORGE PETTEE.

FREDERICK JOHNSON.

COUNCILMEN.

President HEMAN M. BURR.

EDMUND T. WISWALL.

HENRY H. HUNT.

Highways.

(Inc. Streets and Ways, Sidewalks, Drains and Culverts.)

ALDERMEN.

JAMES H. NICKERSON.

GEORGE PETTEE.

N. HENRY CHADWICK.

COUNCILMEN.

THEODORE W. GORE.

HENRY H. READ.

ALBERT W. RICE.

EPHRAIM S. HAMBLEN.

Printing.

ALDERMAN.

EDWIN O. CHILDS.

COUNCILMEN.

EVERETT E. MOODY.

FRANK J. HALE.

Ordinances.

ALDERMEN.

WARREN P. TYLER.

EDWIN O. CHILDS.

COUNCILMEN.

EDMUND T. WISWALL.

EBENEZER H. GREENWOOD.

HENRY H. HUNT.

Claims.

ALDERMEN.

FREDERICK JOHNSON.

N. HENRY CHADWICK.

COUNCILMEN.

President HEMAN M. BURR.

J. CHARLES KENNEDY.

LAWRENCE BOND.

Alms-house and Poor.

ALDERMAN.

GEORGE PETTEE.

COUNCILMEN.

HENRY H. READ.

JOHN A. FENNO.

Assessors' Department.

ALDERMAN.

JOHN WARD.

COUNCILMEN.

EVERETT E. MOODY.

EDMUND T. WISWALL.

Highway Surveyors.

ALDERMEN.

JAMES H. NICKERSON.

GEORGE PETTEE.

N. HENRY CHADWICK.

COUNCILMEN.

THEODORE W. GORE.

HENRY H. READ.

HERBERT H. POWELL.

EPHRAIM S. HAMBLIN.

Public Parks, Squares, and Burial Grounds.

ALDERMEN.

GEORGE PETTEE.

FREDERICK JOHNSON.

N. HENRY CHADWICK.

COUNCILMEN.

HENRY H. READ.

HENRY H. HUNT.

ALBERT W. RICE.

EPHRAIM S. HAMBLIN.

JOINT SPECIAL COMMITTEES.

Sewerage.

ALDERMEN.

JOHN WARD.

N. HENRY CHADWICK.

COUNCILMEN.

ALBERT W. RICE.

EDMUND T. WISWALL.

LAWRENCE BOND.

Rules and Orders.

ALDERMEN.

EDWIN O. CHILDS.

GEORGE PETTEE.

COUNCILMEN.

J. CHARLES KENNEDY.

EVERETT E. MOODY.

LAWRENCE BOND.

Read Fund.

ALDERMEN.

EDWIN O. CHILDS.

WARREN P. TYLER.

COUNCILMEN.

J. CHARLES KENNEDY.

EPHRAIM S. HAMBLEN.

HERBERT H. POWELL.

ALBERT W. RICE.

Clerk of Committees.

BENJAMIN F. OTIS.

TRUSTEES OF NEWTON FREE LIBRARY.

JOHN S. FARLOW, *President*.

Alderman TYLER.

Councilman HALE.

JULIUS L. CLARKE.

EDWIN B. HASKELL.

A. LAWRENCE EDMANDS.

WM. CLAFLIN.

Meetings first Tuesday in each month, 7 o'clock P.M.

BOARD OF HEALTH.

THE MAYOR, *ex-officio*.

OTIS PETTEE, *President*.

Alderman JAMES H. NICKERSON.

JESSE F. FRISBIE.

President HEMAN M. BURR.

J. FRANKLIN FULLER.

Agent of Board.

Clerk.

Agent for Inspection of Plumbing.

Meetings first and third Tuesdays in each month, 4.20 P.

WATER BOARD.

EDWARD W. CATE, *President*.

Alderman GEORGE PETTEE. Councilman EDMUND T. WISWALL.
FRANCIS A. DEWSON. CHARLES FRED CREHORE.

Clerk.

ALBERT S. GLOVER.

SINKING FUND COMMISSIONERS, AND TRUSTEES OF THE READ FUND.

GEORGE S. BULLENS. GEORGE C. LORD.

ALDEN SPEARE.

CITY SOLICITOR.

WINFIELD S. SLOCUM.

ASSESSORS.

ISAAC HAGAR, *Chairman*.

SAMUEL M. JACKSON.

HOWARD B. COFFIN.

Assistant Assessors.

WARD ONE.

R. ORLANDO EVANS.

WARD TWO.

ALBERT A. SAVAGE.

WARD THREE.

OSCAR F. LUCAS.

WARD FOUR.

CHARLES A. MINER.

WARD FIVE.

WILLIAM E. CLARKE.

WARD SIX.

GEORGE WARREN.

WARD SEVEN.

EDWARD W. COBB.

REGISTRARS OF VOTERS.

GEORGE E. BRIDGES, *Chairman*.

GEORGE H. BOURNE.

RICHARD T. SULLIVAN.

Clerk.

ISAAC F. KINGSBURY.

OVERSEERS OF POOR.

THE MAYOR, *ex-officio*.

WARD ONE.

R. ORLANDO EVANS.

WARD TWO.

E. S. COLTON.

WARD THREE.

GEORGE E. ALLEN.

WARD FOUR.

NATHAN MOSMAN.

WARD FIVE.

EUGENE FANNING.

WARD SIX.

GEORGE WARREN.

WARD SEVEN.

JOHN WARNER.

Clerk.

NATHAN MOSMAN.

Meetings first Thursday in each month, 3.45 P.M.

SECRETARY OF SCHOOL COMMITTEE.

THOMAS EMERSON (Superintendent of Schools).

Office at High School. Hours, Monday, 2 to 4 and 6.30 to 8 P.M.

OFFICERS AT CITY HALL.

P. O. Address, West Newton, Mass.

City Clerk, ISAAC F. KINGSBURY.

City Treasurer and Collector of Taxes, JOHN A. KENRICK.

Deputy Collector of Taxes, MOSES CLARK, Jr.

Auditor, BENJAMIN F. OTIS.

City Engineer, ALBERT F. NOYES.

Chairman of Assessors, ISAAC HAGAR.

Water Registrar, ALBERT S. GLOVER.

City Almoner, Clerk of Overseers of Poor, NATHAN MOSMAN.

City Messenger, J. D. WELLINGTON.

City Marshal, DANIEL M. HAMMOND.

OFFICE HOURS.

8.15 A.M. to 12.30 P.M. 2 P.M. to 5 P.M.

Except Saturdays in June, July, August and September,
when the hours are from 8.15 A.M. to 12 30 P.M.

Chief of Fire Department, HENRY L. BIXBY.

Hours at City Hall, 2 to 5 P.M.

Superintendent of Streets, WILLIAM E. FULLER.

Hours at City Hall, 11.30 to 12 A.M., 4.30 to 5 P.M.

Superintendent of Water Works, H. N. HYDE, Jr.

Office at Pipe Yard, Austin Street, Newtonville.

STATISTICS COMPILED BY THE CITY CLERK FROM
THE RECORDS OF HIS OFFICE.

MARRIAGES REGISTERED. 1887.

January 15	August. 13
February 22	September 14
March 7	October 24
April 11	November 37
May 13	December 16
June 21	
July 30	Total 223

Birthplaces of the Above Contracting Parties.

	Groom.	Bride.
United States	140	117
Canada	39	53
Ireland	28	38
England	10	12
Germany	1	1
Wales	1	1
Denmark	1	-
Italy	1	-
Switzerland	1	-
Sweden	1	-
Scotland	-	1
Totals	223	223
American	140	117
Foreign	83	106
Totals	223	223

Birthplace of Parents.

	Fathers.	Mothers.
United States	271	272
Ireland	108	109
England	29	20
Canada	16	22
Nova Scotia	30	33
New Brunswick	10	14
Newfoundland	3	4
Prince Edward Island	11	9
Scotland	4	2
Germany	7	4
Sweden	2	2
Spain	2	—
Switzerland	1	1
Denmark	1	1
West Indies	1	2
Turkey	—	1
Total	496	496
American	271	272
Foreign	225	224
Total	496	496

Birthplace of Parents of Above Deceased Persons.

	Fathers.	Mothers.
United States	146	146
Ireland	98	102
Canada	24	32
England	24	15
Scotland	3	3
Denmark	1	1
France	1	1
Germany	1	1
Italy	1	1
Wales	1	1
Sweden	1	—
Switzerland	1	—
Turkey	—	1
Unknown	19	17
Totals	321	321
American	146	146
Foreign	156	158
Unknown	19	17
Totals	321	321

OFFICE FEES.

Dr.

Assignment of account . . .	\$2 25	
Assignment of income . . .	50	
Assignment of wages . . .	6 50	
Assignment of wages discharged .	50	
Attachments	50	
Bills of sale	1 00	
Bills of sale discharged . . .	50	
Capital stock, certificate of . .	75	
Foreclosure of pledge	2 50	
Licenses, auctioneer	18 00	
Licenses, intelligence office . .	12 00	
Licenses, junk	30 00	
Licenses, liquor, 6th class . .	19 00	
Licenses, marriage	107 50	
Mortgages	66 25	
Mortgages, assignment of . . .	2 50	
Mortgages, discharge of . . .	5 75	
Naturalization certificates . .	5 00	
Women's certificate of business on own account	50	
Total receipts		\$281 25

Dogs Licensed.

1,160 males, at \$2	\$2,320 00	
155 females, at \$5	775 00	
Total receipts for dogs		\$3,095 00
Aggregate collections		\$3,376 25

CR.

By office fees, paid monthly to city treasurer	\$281 25	
Retained from dog license receipts, and paid to city treasurer, 1,315 licenses, at 20c.. . . .	263 00	
Paid county treasurer, dog license receipts	2,832 00	
		\$3,376 25

Dogs are distributed in the Various Wards as Follows:

	1	2	3	4	5	6	7	TOTALS.
Male	139	202	208	166	127	203	115	1,160
Female	27	28	19	15	23	27	16	155
Totals	166	230	227	181	150	230	131	1,315

Showing an increase of 112 dogs over 1886.

Registered Voters. (From List used at City Election, Dec. 6.)

WARDS :	1	2	3	4	5	6	7	TOTAL.
	423	639	519	497	460	488	410	3,436

Enrolled Militia.

	1	2	3	4	5	6	7	TOTAL.
1887	587	653	499	582	546	608	414	3,889
1886	513	581	332	402	433	604	405	3,270
Gain	-	-	-	-	-	-	-	619



City of Newton.

ANNUAL REPORT

OF THE

CITY ENGINEER

FOR THE YEAR 1887.



BOSTON :

PRESS OF RAND AVERY COMPANY.

1888.

OFFICERS OF CONTROLLING BOARDS AND COMMITTEES.

Chief Executive Officer (ex-officio).

HIS HONOR THE MAYOR, J. WESLEY KIMBALL.

Joint Standing Committee on Highways.

ALDERMAN JAMES H. NICKERSON, *Chairman*.

Water Board.

EDWARD W. CATE, *President*.

Joint Special Committee on Sewerage.

ALDERMAN JOHN WARD, *Chairman*.

Board of Health.

HIS HONOR THE MAYOR, J. WESLEY KIMBALL, *President (ex officio)*.

Joint Standing Committee on Public Property.

ALDERMAN BENJAMIN S. GRANT, *Chairman*.

Joint Standing Committee on Public Parks, Squares, and Burial Grounds.

ALDERMAN GEORGE PETTEE, *Chairman*.

CITY ENGINEER'S DEPARTMENT.

City Engineer.

ALBERT F. NOYES.

Principal Assistant Engineer.

FRED. H. BARNES.

Assistant Engineers.

WILLIAM S. FRENCH.

I. W. HASTINGS.

Transitmen and Levellers.

WILLIAM P. MORSE.

ARTHUR L. WOODRUFF.

REPORT.

CITY ENGINEER'S OFFICE, CITY HALL,
WEST NEWTON, MASS., Dec. 31, 1887.

TO THE HONORABLE CITY COUNCIL.

Gentlemen,—In compliance with Section 5 of Ordinance No. 9, I herewith respectfully submit the annual report of the City Engineer's Department for the year 1887.

Amount appropriated for the year	\$7,600 00
Amount expended	7,600 02
	<hr/>
Amount overdrawn	\$ 02

CLASSIFICATION OF EXPENDITURES.

For salaries of city engineer, assistants, draughtsman, and rodmen	\$6,931 49
For car-fares and other incidentals	236 47
For care and keeping of horse, wagon, etc.	327 15
For drawing-paper and other supplies	63 41
For instruments and repairs	41 50
	<hr/>
Total amount	\$7,600 02

The item of salaries of city engineer and assistants may be divided as follows :—

For defining street-lines ; making surveys and maps, the examination of titles and draughting of reports, orders and releases for street widenings, acceptance, and extension ; office records ; defining and establishing proposed grades of streets ; surveys, plans, profiles, and estimates for proposed work on highways, including two new bridges over Charles River ; and all work relating to highways	\$2,890 60
For clerical work in keeping highway accounts,	894 81
For defining lines and grades for the construction of drains and culverts ; making preliminary surveys, plans, profiles, diagrams, estimates, calculations, and all work relating to drains, including the Laundry Brook and Morse Field districts ; and for the examination of, and reports upon, the various sewerage systems in use	1,071 89
For establishing lines and grades for the extension of water-pipes, locating and measuring service-pipes, and for all work relating to water-works	988 30
For plans, estimates, reports, inspection of plumbing, correspondence, and for all work relating to the Board of Health	336 85
For defining the lines, surveys, and plans of city property, making plans and specifications for the alteration and repairs on old	
<i>Amount carried forward</i>	<hr/> \$6,182 45

<i>Amount brought forward</i>	\$6,182 45
buildings, and superintending the execution of the same, under the direction of the Joint Standing Committee on Public Property	237 33
For copying all Newton plans at registry of deeds and county commissioners' office, and indexing the same; and for all indexing of other plans, deeds, field-work, etc. .	209 69
For surveys and plans for numbering the houses on the various streets of the city, and for all other work relating to the same	183 34
For making surveys and levels for plans, profiles, and estimates for the use of the city solicitor in suits for or against the city; for attending court, and for all work relating to said suits	68 44
For defining the lines, grading, making surveys and plans of the various parks; and for all other work under the direction of the Joint Standing Committee on Parks	50 24
Total amount	<hr/> \$6,931 49

Surveys have been made of the whole or a part of twenty-one streets, covering a length of four and five-tenths miles. One hundred and sixty-eight plans and profiles have been made. Levels have been taken over the whole or a part of sixty-two streets or brooks, — a total length of ten and eight-tenths miles. Lines have been established on sixty-four streets, and grades on ninety streets. The total length of

grades given was eleven and ninety-seven one-hundredths miles. A survey has been made of the district in the vicinity of Laundry Brook, from Washington Street to Walnut Street. Also a survey of the Waltham line between Lexington Street and Stony Brook was commenced last winter, and suspended by reason of the breaking up of the ice on the river. The survey of a portion of Nonantum has also been completed. A large district map has been completed of the easterly portion of Newtonville and the westerly portion of Newton, south of the Boston & Albany Railroad. The total number of plans, profiles, tracings, etc., now in the office, is 2,793.

The minimum number of assistants employed during the past year is four, average number six, and the maximum number at any time, eleven.

Upon the following-named streets, plans and profiles have been made, lines and grades defined, titles and boundaries of the abutting estates examined, reports, orders, and releases drawn; and said streets have been laid out and accepted by the city council.

STREETS ACCEPTED IN 1887.

STREET.	From	To	Width in Feet.	Length in Feet.
Chapel . . .	Watertown St. .	Middle St. . .	40	1,357
Edinboro' . . .	Walnut St. . .	Lowell St. . .	40	367
Middle . . .	Adams St. . .	Chapel St. . .	40	562
Park Place . . .	Washington P'k,	Southerly . .	30	337
Prince . . .	Temple St. . .	A new street .	40	1,453
Prospect . . .	Washington St.	North-westerly .	40	571
Ridge Ave. . .	Parker St. . .	South-easterly .	40	548
Station Ave. . .	Lake Ave. . .	B. and A. R.R.	40	124
Tappan Place .	Lincoln St. . .	Northerly . .	40	312
Total . . .	. . . . .	1.07 miles . .	or	5,631

Lexington Street, from its junction with River Street to the Waltham line, has been relocated to conform to the change of line ordered by the county commissioners in the city of Waltham.

The routine work of the office, the system of accounts, and the copying and indexing of all Newton plans at the registry of deeds, county commissioners', or clerk of the court's, offices, also all private land-plans obtainable, has been continued as outlined in previous reports.

A "blue print" apparatus has been set up, and greatly increases the facilities of the office for duplicating working-plans for committees or contractors.

The citizens having become desirous that the houses upon the various streets of the city should be numbered, the city council passed the following order:—

"Ordered, That, whenever numbers are affixed to buildings fronting on any street, they shall be such numbers as may be furnished by the city engineer, and shall be at least two inches in size, of material satisfactory to the city engineer, and so affixed as to be plainly seen. The city engineer is hereby requested to present to this board for their approval (as frequently as possible) plans of the various streets of the city, with the proposed numbers shown upon them. As far as possible the streets shall be numbered from east to west and from north to south, with odd numbers on the right and even numbers on the left, allowing where possible a space of twenty-five feet for each number, unless otherwise ordered by this board. No numbers shall be so affixed until the plan of the street has been approved by this board."

Surveys were made and plans prepared of thirty-nine

streets, all of which were approved. The following streets were numbered : —

Austin Street.	Newtonville Avenue.
Avon Place.	North School Street.
Bacon Street.	Orchard Street.
Beach Street.	Peabody Street.
Bowers Street.	Pearl Street.
Boyd Street.	Pond Avenue.
Brooks Avenue.	Rockland Street.
Carleton Street.	St. James Street.
Channing Street.	Thornton Street.
Court Street.	Thornton-street Court.
Emerson Street.	Waban Street.
Fayette Street.	Waban Park.
Gardner Street.	Wales Street.
Hall Street.	Walnut Park.
Hamilton Street.	Walnut St. (Crafts to
Harvard Street.	Mills Sts.).
Hovey Street.	Washington Park.
Jefferson Street.	Washington Street.
Jewett Street.	Waverley Place.
Lowell Street.	William Street.

As rapidly as the current work of the department will permit, plans will be prepared for the remaining streets of the city.

During the year the department has made the usual surveys, plans, etc., for legislative hearings, accident cases and suits, for the use of the city solicitor.

Late in the fall a survey was made of the land owned by C. P. Clark and the heirs of George C. Rand, abutting on

Centre Street. Bowen Street, and Tyler Terrace, for the proposed playground in Ward 6. Estimates were made for improving and covering Hammond's Brook, which runs through the land, and for grading the land in a manner suitable to a field for sports.

HIGHWAY DEPARTMENT.

Highway Surveyors and Joint Standing Committee on Highways.

ALDERMAN JAMES H. NICKERSON, *Chairman.*

ALDERMAN GEORGE PETTEE.

ALDERMAN SETH K. HARWOOD.

COUNCILMAN LEWIS E. COFFIN.

COUNCILMAN N. HENRY CHADWICK.

COUNCILMAN THEODORE W. GORE.

COUNCILMAN HENRY H. READ.

EXECUTIVE OFFICERS.

Superintendent of Streets.

WILLIAM E. FULLER.

Assistant Superintendents of Streets.

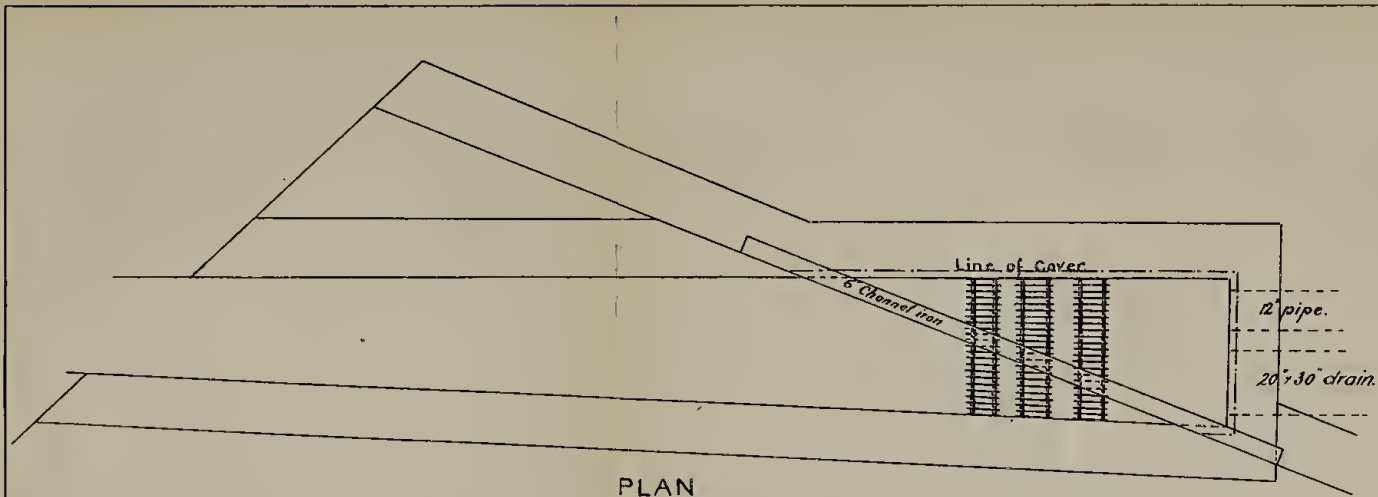
GEORGE E. STUART, Wards 1, 2, and 7.

JOHN J. WARE, Wards 3 and 4

JOHN A. PECK, Wards 5 and 6.

City Engineer.

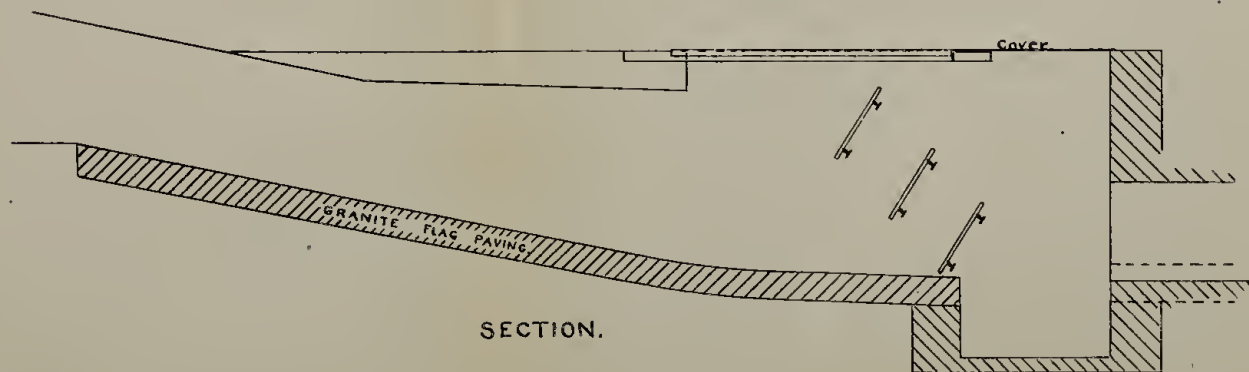
ALBERT F. NOYES.



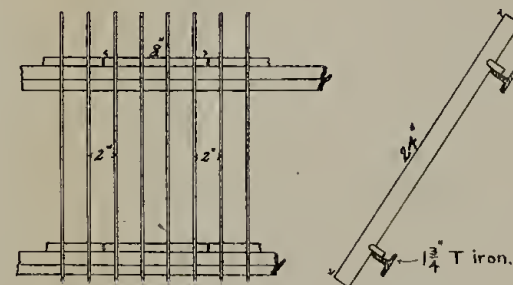
PLAN

Sketch of inlet to Hyde's Brook Drain.

Scale, $\frac{1}{4}$ in = 1 ft.

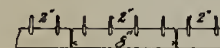


SECTION.



FRONT ELEVATION.

SIDE,



SECTION.

Details of Grates and Supports.

Scale, 1 in = 1 ft.



Sketch of the



HIGHWAYS.

The Joint Standing Committee on Highways has under its management the repairs, building, and rebuilding of streets, drains, culverts, sidewalks, etc., and the gravel-lands. Alderman Harwood and Councilmen Gore and Read were new members of the committee. The executive officers of the department remained the same. The policy of the department in performing thorough work has been maintained as in past years; but it has been adhered to so closely as to result in the serious neglect of many of the older streets, which have become out of repair, and should be immediately resurfaced.

All of the machinery of the department is under the care of the engineer, William Kent, and has been kept by him in excellent condition. The steam-road roller has picked up 1,589 square yards of Telford, macadamized or gravel road; and has laid down 34,615 square yards of the same. The roller continues to give satisfaction.

Plans have been prepared for setting up a stone-crusher and set of revolving screens at the Murray-street ledge. It is proposed to set up this crusher in the most approved manner, with belts running from the screens to carry the various sizes of crushed stone to their proper bins; the bins to be set upon the hillside with sloping bottoms, so that the mate-

rial need not be handled from the time it is dumped on the platform of the crusher until it is loaded into the carts; the cost of handling being a very material proportion of the present expense of crushing.

The gravel-land of Michael Lester on Pine Street, which was bonded last year, has been purchased. The gravel on this land is hard and coarse, and is valuable to the city for both paving and crushing purposes.

The bridge over Charles River at Washington Street (Lower Falls), and Bemis Bridge at Nonantum, are old wooden bridges: they have been repaired and patched a number of times, and should be thoroughly rebuilt. During the year, surveys, plans, and estimates have been made for rebuilding these bridges, both with stone and with wood; and it is now intended to rebuild both during the coming year.

The mileage of concrete sidewalks and street-crossings in the several wards of the city at the present time is as follows:—

Ward 1	.	.	.	.	.	.	6.58 miles
“ 2	.	.	.	.	.	.	7.73 “
“ 3	.	.	.	.	.	.	5.54 “
“ 4	.	.	.	.	.	.	5.04 “
“ 5	.	.	.	.	.	.	3.05 “
“ 6	.	.	.	.	.	.	7.11 “
“ 7	.	.	.	.	.	.	8.59 “
							<hr/>
Total	.	.	.	.	.	.	43.74 “

It can readily be seen from the above, that the maintenance of these walks, and the construction of additional

walks, is becoming each year a source of greater expense to the city, and that the maintenance of these walks demands serious consideration. As in previous reports, I would recommend that they be resurfaced oftener, and at a less expense, than under the present policy of allowing not only the surface, but the foundations, to be worn out.

On Lexington Street, between River Street and the Waltham line, the grade of the hill has been lowered, and the loam removed from under the road-surface: the result being a better road-surface, and better grade for traffic passing up the hill.

On River Street, between Cherry Street and Waltham Street, the street has been widened and straightened, a new road-bed has been built, and the general appearance of the street greatly improved.

On Brighton Street, between Pembroke Street and the Boston line, where the hill was previously cut down, the road-bed has been rebuilt, the street widened to its full width, and drains put in for the surface and ground water.

The grading of Auburn Street at the subway has been completed, and it is expected that the difficulty experienced last year from surface-water will not occur again.

The square at the junction of Walnut and Lincoln Streets has been raised, curbing has been set on both sides of the square, and concrete sidewalks laid. The drains in both Walnut and Lincoln Streets were increased in size, and the grades changed to provide for the water of a larger district than was originally designed to be drained this way. The general appearance of the square has been greatly improved, and the former difficulty caused by surface-water has been removed.

Owing to the nature of the soil, the walls of the brook crossing Central Avenue, and also the street itself, have been settling for years: owing to this settlement, it has been difficult to make the water in the brook run away as it should. It was decided this year to lay a pipe through a portion of the brook, the pipe being laid on a plank bottom supported by piles, about twenty-six feet in length, driven to a bearing in hard soil.

Upon the completion of the Eldridge-street drain, a common bar-iron grating was placed across Hyde's Brook, just above its inlet, to prevent the entrance of any material which would tend to choke the drain. Early in December, 1886, during a heavy rain, this grating became so choked with leaves and sticks as to cause a serious overflow, resulting in considerable damage to the Harrington and Rogers estates. It became apparent that a grating must be constructed which would catch all floating material, and yet could not become clogged so as to stop the flow of the water.

The accompanying sketch will show the details of the grates designed for this purpose, and may be briefly described as follows: There are three grates set one above the other, and about eighteen inches up stream from each other. The grates are set upon a slope, the top of each grate being a little above the level of the bottom of the grate above it, so that, when the lower grate becomes full, the water backs up, and the second grate stops all floating matter; the material being on the surface, and stopped by the second grate, the water passes under this, and over the top of the lower grate. These grates, which are about three and one-half feet in width across the brook, are made in sections eight inches wide: the grates are two feet in height, and the bars two

inches apart on centres. The small sections are very light, and, being hung on channel-irons set in the masonry, can be readily taken out and cleaned by a laborer.

They have not only given perfect satisfaction, but their operation is as anticipated. An examination after a recent heavy rain showed the lower set completely stopped; the lower portion of the second set catching the floating material, and the body of the water passing off between the two grates.

The land bordering on Laundry Brook in the vicinity of Harvard, Clarendon, and Deland Streets and Norwood Avenue, having been sold for building purposes, the city was requested to take action to prevent the usual overflow of the brook in this district. This led to the passage of the following order by the Board of Mayor and Aldermen, Feb. 7, 1887.

“Ordered, That the City Engineer be requested to make a survey of the territory bordering on Laundry Brook, between Walnut Street and the Boston and Albany Railroad, Ward 2, and report to this Board what portion of said territory is subject to overflow from brook or surface water; how much of said territory should be raised by filling; what work, if any, should be done upon Laundry Brook; and recommend a grade in said district for drainage and sewerage, below which no cellar or basement cellar shall be constructed.”

Careful surveys, calculations, and estimates were made, and a special report submitted to the City Council April 4, 1887 (see Appendix). No further action has been taken by the City Council; but, by the authority of the Board of

Health, the section of the brook above referred to has been greatly improved.

The question of providing for the drainage of the Morse-Field District was considered by the committee early in the year. A sub-committee of the Highway Committee and the City Engineer met the selectmen of Watertown to arrange for the relief of the district by some joint action. This joint committee authorized the City Engineer to submit a plan, and estimate of the cost of the proposed work, and a suggestion for the equitable apportionment of the cost between the city and town. The method of apportionment agreed upon by the joint committee was approved by the City Council of Newton, and an appropriation was made for executing the work. When brought before the town of Watertown, at its town-meeting, the article appropriating the necessary money was defeated. At a subsequent meeting, a special committee with full powers was appointed by the town. A number of meetings of this committee and the committee on highways were held: modifications of the original plans and various methods of apportionment of the cost of the work were proposed, but no agreement has been effected as yet.

The following is a statement of the expenditures under the several appropriations controlled by the Highway Committee : —

CURBING.

Amount appropriated by order of the City Council for the year 1887	\$1,500 00	
Amount of additional appropriation .	500 00	
	<hr/>	
Total appropriation		\$2,000 00
Amount charged by the auditor to the appropriation for curbing .	\$1,882 75	
Amount charged by the auditor to other appropriations	711 89	
	<hr/>	
Total amount expended as per superintendent's and assistant superintendent's records of work		\$2,594 64

The following table shows the number of linear feet, kind, and cost of curbing which has been laid : —

CURBING LAID IN 1887.

STREET.	Ward.	Linear Feet of Straight Curbing.	Linear Feet of Curved Curbing.	Total Length of Curbing.	Cost.
Auburn	4	190.00	32 70	222.70	\$176 34
Beach	2	-	12 30	12.30	12 46
Beacon	6	54.45	17 13	71 58	59 51
Centre	6	424.46	58 67	483.13	447 81
Court	2	-	12.30	12 30	12 46
Eldridge (old curbing),	7	-	11.83	11.83	9 40
Elliot	5	29.00	3 21	32.21	31 16
Hancock	4	308.00	12 84	320 84	238 67
Hartford	5	-	19.04	19.04	*11 56
Lake Avenue	6	-	13 13	13 13	17 10
Laurel	6	-	13.12	13.12	17 09
Lincoln	5	265.85	19 04	284 89	*128 10
Melrose	4	-	32.71	32.71	36 24
Newton Highlands Sq.	5	173.63	77.90	†251.53	400 59
Pelham	6	379.15	22.19	401.34	375 29
Pleasant	6	38.30	16.05	54.35	56 80
River	3	66 55	3 18	69 73	49 02
Rowe	4	-	33 25	33.25	45 59
Vernon	7	-	11.82	11.82	9 40
Walnut	2	277.05	29.06	306.11	240 57
Washington	2	83.70	3 18	86.88	54 28
Stock	-	113.68	-	113.68	58 26
Miscellaneous . . .	-	207.44	-	207.44	106 94
Total	-	2,611.26	454.65	3,065.91	\$2,594 64

* The city's proportion of the cost is included in that of Newton Highlands Square.

† Curbing on south side of Newton Highlands Square will be found under Lincoln and Hartford Streets.

DRAINS AND CULVERTS.

Amount appropriated by order of the City Council for the year 1887	\$12,000 00	
Amount transferred to appropriation for highways, general repairs	1,500 00	
	<hr/>	
Total appropriation		\$10,500 00
Amount charged as per auditor's records	\$10,170 98	
Amount charged by auditor to other appropriations	18 00	
	<hr/>	
Amount expended as per superin- tendent's and assistant superin- tendent's records of work		\$10,188 98

The following tables show the cost, etc., of the catch-basins, culverts, and drains, constructed or re-constructed during the year, and the streets in which the same were built:—

CATCH-BASINS CONSTRUCTED AND RECONSTRUCTED IN 1887.

STREET.	LOCATION.	COST.	REMARKS.
Auburn	Near Melrose St.	\$131 47	
Carleton	- - - - -	5 50	Repairs.
Centre	Near Bennington St. . . .	36 24	Repairs.
Centre	Corner of Church St. . . .	11 81	Repairs.
Centre	In Ward Six	39 61	Repairs.
Chapel	Corner of Green St.	10 78	
Chestnut	Corner of Winter St. . . .	18 32	
Church	Near Farlow Park	28 31	
Greenough	- - - - -	3 25	Repairs.
Harvard	Near Newtonville Ave. . . .	2 62	
Hyde's Brook (Branch of)	Near Church St., in Wood- ward estate	50 42	
Jefferson	- - - - -	79 10	
Mt. Vernon	- - - - -	14 88	
Otis	Near Kimball Terrace . . .	132 19	
Park Place	- - - - -	195 84	
Shaw	- - - - -	8 25	Repairs.
Station	- - - - -	30 63	
Temple	- - - - -	15 00	
Vernon	- - - - -	21 58	
Washington . . .	Near Central Ave.	59 20	
Washington . . .	Near Waverley Ave. . . .	100 49	
Washington . . .	Opposite Chestnut St. . . .	18 88	
		<hr/> \$1,014 37	

CULVERTS CONSTRUCTED AND RECONSTRUCTED IN 1887.

STREET.	LOCATION.	COST.	REMARKS.
Cabot	At Laundry Brook	\$22 22	Repairs.
Central Ave. . .	Near Central Place. . . .	110 77	Raising to grade.
Crafts	At Newtonville drain . . .	123 70	Repairs.
Eddy	At Cheese-cake Brook . . .	77 37	Repairs.
Grove	Near B. and A. R.R. . . .	28 50	Repairs.
Newtonville Ave.	- - - - -	21 25	Repairs.
Paul	Near Centre St.	43 58	Repairs.
Walnut	- - - - -	7 25	Repairs.
Washington . . .	At Cheese-cake Brook . . .	61 29	Repairs.
Washington . . .	- - - - -	2 16	Repairs.
Total	- - - - -	<hr/> \$498 09	

DRAINS CONSTRUCTED IN 1887.

STREET.	Size in Inches.	Length in Feet.	Man- holes.	Catch- basins.	Feet of Inlets.	Size of Inlets.	Cost.	Location.
Bowers	{ 10	182.00	{ -	2	60.75	6	\$175 44	Near depot.
Brighton	{ 8	126.00	{ -	-	12.00	4	568 95	Pembroke St. to Boston line.
Central Ave.	{ 8	1,050.00	{ -	-	-	-	61 43	{ Raising to grade and relaying 137 feet
Centre	{ 12	215.00	{ -	-	-	-	643 11	{ of pipe-drain.
Charles	{ 30 x 24	591.50	{ 1	1	48.00	8	1,078 04	Fairmont Ave. to beyond Lombard St.
Church	{ 18	162.45	{ 3	4	80.00	6	313 61	{ Charles River to brook in estate of B.
Jewett	{ 18	132.00	{ 4	-	-	-	123 95	{ J. Greeley.
Lexington	{ 15	533.35	{ -	-	-	-	7 44	Maple Pl. to beyond Richardson St.
Lowell	{ 8	117.00	{ -	-	-	-	335 66	Boyd St., southerly.
Maple Pl.	{ 24 x 24	18.00	{ -	-	-	-	528 15	At River St.
Newton H's Sq.	{ 18	12.00	{ -	-	-	-	75 43	Near Walnut St.
Newtonville Ave.	{ 15	148.00	{ 1	2	24.00	8	205 00	{ Church St., southerly.
Park	{ 12	61.30	{ -	2	-	-	601 31	Lincoln St. to Lake Ave.
Putnam	{ 15	366.00	{ -	-	-	-	355 05	Near Bellevue St.
Sumner	{ 24 x 24	219.00	{ -	-	-	-	87 85	In George C. Lord's estate.
Turner	{ 18	250.00	{ -	-	-	-	-	Hunter St. to Windrop St.
	{ 15	90.00	{ 1	6	60.00	10	-	Lyman St. to Everett St.
	{ 10	95.00	{ -	-	57.00	8	-	{ Raising to grade and relaying 241 feet
	{ -	280.00	{ -	-	-	-	-	{ of pipe-drain.
Totals	-	4,892.40	10	17	341.75	-	\$5, 177 47	

The following miscellaneous items of expenditure have also been charged to drains and culverts:—

Arlington Street, drain under sidewalk . . .	\$2 40
Bemis Street, repairs on bridge over Charles River	150 67
Boyd Street, pumping out cellars in spring . .	10 97
Boylston Street, repairs on bridge over Charles River	17 89
Central Street, cleaning drain	5 25
Centre Street, cleaning catch-basins	14 00
Cheese-cake Brook, cleaning	87 00
Cleaning catch-basins	1,264 41
Crafts Pit, drainage for drinking-fountain . .	22 11
Crafts Street, cleaning drain near B. Farrell's estate	8 24
Cypress Street, repairing sluice-boxes . . .	4 49
Glen Avenue, repairs on drain	7 75
Henshaw Street, repairs on drain	4 75
Highland Street, manhole cover	1 97
Hyde Avenue, repairs on drain	8 79
Hyde's Brook, repairs and improvement . . .	521 93
Lagrange Street, repairs on bridge	5 92
Lake Avenue, drain near M. G. Crane's estate,	8 80
Linwood-avenue drain, repairs	95 65
Mt. Ida Street, repairs on drain	5 16
Murray Street, repairs on drain	31 38
Murray-street Brook, cleaning	26 46
Newtonville Avenue, repairs on drains . . .	18 33
Newtonville drain, cleaning and repairs . . .	95 95
<i>Amount carried forward</i>	<u>\$2,420 27</u>

<i>Amount brought forward</i>	\$2,420 27
Nonantum Street, drain in Mrs. Walker's estate,	12 19
Sargent Street, repairs on drain	25 72
Station Street, repairs on drain at H. Cousen's estate	33 21
Stock on hand, paid for from appropriation for 1887:—	
Bricks	\$63 35
Cement	40 20
Cement-pipe	183 28
Covering-stone	55 27
Grates	6 75
Manhole covers	5 91
	—————
	354 76
Walnut Street, at stand-pipe near Mill Street .	3 41
Washington Street, repairs on bridge over Charles River	169 32
Washington Street, repairs near Cottage Hos- pital	27 00
Watertown Street, drinking-fountain at Chapel Street	5 98
Watertown Street, repairs on drain	5 25
Waverley Avenue, removing ice	3 50
Winchester Street, repairs on bridge over South- meadow Brook	44 50
Sundries	393 94
	—————
Total	\$3,499 05

SUMMARY OF EXPENSES CHARGED TO THE APPROPRIATION FOR DRAINS AND CULVERTS.

Catch-basins constructed and re-constructed .	\$1,014 37
Culverts constructed and re-constructed . .	498 09
Drains constructed	5,177 47
Miscellaneous expenses	3,499 05
	<hr/>
	\$10,188 98

GRAVEL-LANDS.

Amount appropriated by order of the City Council for the year 1887	\$3,000 00
Amount charged to appropriation for gravel-lands as per auditor's records	\$3,000 00
Amount charged by auditor to appropriation for highways, general repairs	46 35
	<hr/>
Total amount expended as per superintendent's and assistant superintendent's records of work	\$3,046 35

The above amount has been expended in the following manner:—

Bowdoin Street, corner of Erie Avenue, gravel and labor	\$49 70
Brighton Street, sand	25
Cabot Street, gravel for sidewalks	15 10
Centre Street, sand for sidewalks	25
	<hr/>
<i>Amount carried forward</i>	\$65 30

<i>Amount brought forward</i>	\$65 30
Centre Street, paving-stones for gutters in Ward 6	88 50
Circuit Avenue, filling	52 85
Crafts Street, gravel for sidewalks	5 00
Fairmont Avenue, gravel for sidewalks	11 50
Farlow Park, sand for paving gutters	25
Mt. Vernon Street, sand	25
Newtonville Avenue, gravel for sidewalks	1 30
Oak-hill District, gravel for	69 15
Otis Street, gravel for sidewalks	19 40
Pembroke Street, stone and gravel for improve- ment	20 00
Pine Street, land on	2,564 00
Sumner Street, paving-stones for gutters	68 00
Washington Street, sand for drain	25
Sanding sidewalks, sand for	67 85
Miscellaneous purposes, gravel, paving-stones, etc.	12 75
Total	<hr/> \$3,046 35

HIGHWAYS, GENERAL REPAIRS.

Amount appropriated by order of the City Council for the year 1887, \$60,000 00	
Amount transferred from appropria- tion for drains and culverts	1,500 00
Amount of additional appropriation	500 00
Amount received from various sources	660 10
Total appropriation	<hr/> \$62,660 10
<i>Amount carried forward</i>	\$62,660 10

<i>Amount brought forward</i>	\$62,660 10
Amount expended as per superintendent's and assistant superintendent's records of work	\$61,448 53
Amount charged by auditor in excess,	2,435 66
<hr/>	
Amount expended as per auditor's records	\$63,884 19
<hr/>	
Balance overdrawn	\$1,224 09

The following table will show in detail the amount expended on each street for maintenance as made up from the superintendent's and assistant superintendent's records of work : —

Allston	\$342 09
Alpine	143 00
Auburn	650 25
Auburndale Avenue	151 59
Beacon	790 63
Bellevue	89 00
Belmont	5 25
Boyd	20 03
Boylston	232 89
Bridge	26 63
Cabot	27 23
Central Avenue	803 89
Central	17 25
Centre	1,337 58
Cherry	198 72
Cherry-street Place	422 90
<hr/>	
<i>Amount carried forward</i>	\$5,258 93

<i>Amount brought forward</i>	.	.	.	.	\$5,258 93
Chestnut . . . . .	.	.	.	.	233 87
Church . . . . .	.	.	.	.	366 72
Concord . . . . .	.	.	.	.	18 25
Cottage . . . . .	.	.	.	.	23 25
Court . . . . .	.	.	.	.	9 04
Crafts . . . . .	.	.	.	.	3 16
Cranberry . . . . .	.	.	.	.	5 00
Crescent Avenue . . . . .	.	.	.	.	18 50
Eldridge . . . . .	.	.	.	.	306 32
Elliot . . . . .	.	.	.	.	99 50
Elm . . . . .	.	.	.	.	18 25
Farlow Park . . . . .	.	.	.	.	457 94
Florence . . . . .	.	.	.	.	32 50
Forest Avenue . . . . .	.	.	.	.	16 94
Fountain . . . . .	.	.	.	.	179 75
Franklin . . . . .	.	.	.	.	83 50
Freeman . . . . .	.	.	.	.	16 12
Grove . . . . .	.	.	.	.	299 45
Hamilton . . . . .	.	.	.	.	11 75
Hammond . . . . .	.	.	.	.	515 05
Hancock . . . . .	.	.	.	.	25 00
Harvard . . . . .	.	.	.	.	15 54
Highland Avenue . . . . .	.	.	.	.	7 00
Hillside Avenue . . . . .	.	.	.	.	291 11
Hollis . . . . .	.	.	.	.	318 01
Howard . . . . .	.	.	.	.	16 31
Jackson . . . . .	.	.	.	.	907 39
Kenrick Park . . . . .	.	.	.	.	6 75
<i>Amount carried forward</i>	.	.	.	.	<hr/>\$9,560 90

<i>Amount brought forward</i>	.	.	.	.	.	.	\$9,560 90
Lexington	.	.	.	.	.	.	100 50
Lincoln	.	.	.	.	.	.	55 88
Lowell	.	.	.	.	.	.	218 87
Maple, Ward 4	.	.	.	.	.	.	782 69
Maple, Ward 7	.	.	.	.	.	.	2 50
Mount Vernon	.	.	.	.	.	.	726 20
Newtonville Avenue	.	.	.	.	.	.	76 62
Newtonville Square	.	.	.	.	.	.	7 25
Nonantum Square	.	.	.	.	.	.	80 12
Nonantum	.	.	.	.	.	.	19 57
Oak-hill District	.	.	.	.	.	.	1,091 72
Orchard	.	.	.	.	.	.	5 46
Otis	.	.	.	.	.	.	534 07
Park	.	.	.	.	.	.	146 12
Pearl	.	.	.	.	.	.	18 19
Pelham	.	.	.	.	.	.	450 61
Pembroke	.	.	.	.	.	.	25 26
Perkins	.	.	.	.	.	.	5 00
Pleasant	.	.	.	.	.	.	311 24
Prospect	.	.	.	.	.	.	2 37
Putnam	.	.	.	.	.	.	19 12
Richardson	.	.	.	.	.	.	198 17
River	.	.	.	.	.	.	306 63
Rowe	.	.	.	.	.	.	36 37
St. James	.	.	.	.	.	.	18 50
Sargent	.	.	.	.	.	.	3 61
Seaverns	.	.	.	.	.	.	12 10
Station	.	.	.	.	.	.	213 44

Amount carried forward \$15,029 08

<i>Amount brought forward</i>	.	.	.	.	\$15,029 08
Summer	.	.	.	.	18 50
Summit	.	.	.	.	66 56
Temple	.	.	.	.	26 75
Thornton	.	.	.	.	87
Tremont	.	.	.	.	57 12
Turner	.	.	.	.	295 80
Vernon	.	.	.	.	12 36
Waban Park	.	.	.	.	5 23
Wales	.	.	.	.	11 75
Walnut	.	.	.	.	329 93
Waltham	.	.	.	.	99 50
Washington	.	.	.	.	4,424 58
Watertown	.	.	.	.	61 54
Waverley Avenue	.	.	.	.	628 95
Webster	.	.	.	.	13 50
Winchester	.	.	.	.	20 00
Winter	.	.	.	.	212 85
Woodland Avenue	.	.	.	.	229 73
Auburndale subway	.	.	.	.	274 61
Carting paving-stones	.	.	.	.	1,130 09
Cleaning crossings	.	.	.	.	479 47
Cleaning gutters	.	.	.	.	4,353 72
Gravel-pits	.	.	.	.	14,859 46
Mowing weeds	.	.	.	.	489 73
Patching streets	.	.	.	.	1,658 72
Paving gutters	.	.	.	.	63 50
Paving around stand-pipes	.	.	.	.	146 07
Picking stones	.	.	.	.	1,104 54
<i>Amount carried forward</i>					\$46,104 51

<i>Amount brought forward</i>	.	.	.	.	\$46,104 51
Portable crusher	.	.	.	.	127 06
Purchase of horses	.	.	.	.	1,600 00
Removing snow	.	.	.	.	8,789 04
Stable account	.	.	.	.	106 58
Steam-drill	.	.	.	.	545 26
Steam-roller	.	.	.	.	428 65
Street-signs	.	.	.	.	108 63
Superintendent's salary	.	.	.	.	1,500 00
Tool-account	.	.	.	.	1,133 40
Trimming trees	.	.	.	.	4 07
Miscellaneous	.	.	.	.	1,001 33
<hr/>					
Total	.	.	.	.	\$61,448 53

HIGHWAYS, WIDENING, RECONSTRUCTION, AND IMPROVEMENT.

Amount appropriated by order of the City Council for the year 1887,	\$20,000 00
Amount of additional appropriation by the City Council	2,000 00
<hr/>	
Total appropriation	\$22,000 00
Amount expended as per superin- tendent's and assistant superin- tendent's records of work	\$21,278 98
Amount charged by auditor in excess,	85 33
<hr/>	
Total amount expended as per auditor's records	21,364 31
<hr/>	
Balance unexpended	\$635 69

The above amount has been expended upon the following streets, and for the following purposes:—

STREET.	Ward.	Location and Description of Work.	Amount.
Beach and Court.	2	Rounding south-west corner .	\$42 95
Brighton . . .	7	Reconstruction from Pembroke St. to Boston line	4,740 38
Circuit Ave. . .	5	Construction of a part of . .	1,292 12
Gibbs	6	Reconstruction from Sumner to Everett Sts.	1,408 67
Hancock	4	Reconstruction south of Central St.	1,521 46
Hyde Ave. . . .	7	Regrading	5 21
Lexington . . .	3,4	Reconstruction from River St. to Waltham line	1,861 35
Newton H'ds Sq.	5	Raising grade and reconstruc- tion	1,362 83
Pembroke	7	Reconstruction from Arlington to Durant Sts.	1,465 52
River	3	Widening and reconstruction from Waltham to Cherry Sts.	3,089 70
Sumner	6	Regrade and pave gutters Wil- low St. to top of hill	2,415 72
Vernon	7	Reconstruction from Centre to Park Sts.	1,983 93
Washington . .	2	Widening near Crafts St. at Stanley estate	64 75
Miscellaneous . .	—	— — — — —	24 39
			<hr/> \$21,278 98

LAND-DAMAGES

Amount appropriated by order of City Council for the year 1887	\$1,000 00
Amount expended as per auditor's records	516 00
Balance unexpended	<hr/> \$484 00

The above amount has been expended on the following-named streets:—

Lexington Street, for land taken to widen on estate of Daniel Hickey	\$16 00
Station Avenue, for land and con- struction of street from Lake Avenue to station at Newton Highlands	500 00
Total	<hr/> \$516 00

REMOVAL OF ASHES.

The collection of ashes is made by the highway department, under the direction of the Highway Surveyors.

Amount appropriated by order of the City Council for the year 1887	\$4,000 00
Amount expended as per auditor's records	3,293 82
Balance unexpended	<hr/> \$706 18

The following statement will show the cost of the collection of ashes for each ward, and the day of the week on which the collection is made:—

Wards 1 and 7, Thursday	\$1,699 77
Ward 2, Friday	490 60
Ward 3, Saturday	427 14
Ward 4, Monday	343 47
Ward 5, Tuesday	303 21
Ward 6, Wednesday	549 31

Cost of labor, as per superintendent's and assistant superintendent's records of work	\$3,213 50
Maintenance of carts	17 50
Maintenance of horses	12 00
Blacksmithing	50 82
Total	<hr/> \$3,293 82

SIDEWALKS AND STREET-CROSSINGS.

Amount appropriated by order of the City Council for the year 1887, \$11,000 00	
Amount of additional appropriation	3,300 00
Total appropriation	<hr/> \$14,300 00
Amount charged to appropriation for sidewalks and street-crossings, as per auditor's records	\$14,037 27
Amount charged by auditor to other appropriations	1,744 75
Total amount expended as per superintendent's and assistant superintendent's records of work	<hr/> \$15,782 02

The following table shows the number of square yards of concrete sidewalk and street-crossings laid and repaired, the number of feet of flagstone crossings laid, and the cost of all sidewalks and crossings constructed:—

STREET.	Ward.	SQUARE YARDS OF CONCRETE.				No. of Feet of Flag- stone Crossings.	Cost.	Remarks.
		Sidewalks, New.	Sidewalks, Repaired.	Crossings, New.	Cross'gs, Rep'd.			
Adams	2	—	—	—	—	—	\$30 99	Gravel.
Arlington . . .	7	114 98	—	—	—	—	72 50	
Auburn	4	411.93	7.78	33.71	—	—	357 82	
Anburndale Ave.	4	—	—	—	—	—	6 38	
Beacon St. . . .	6	157.17	—	—	—	—	354 87	Gravel.
Belmont	7	5.67	—	—	—	—	30 77	Partly gravel.
Bennington . .	1	46.33	—	30.09	—	67.80	39 21	
Cabot	2	187 39	—	—	—	—	374 96	
California . . .	1, 2	—	—	—	—	—	325 34	Gravel.
Cemetery Ave.	6	—	—	—	—	—	108 11	Gravel.
Central Ave. . .	2	172 36	—	53.70	—	—	215 18	
Central Pl. . . .	2	7.27	—	—	—	—	4 73	
Central	4	309.11	—	—	—	—	208 68	
Centre	1, 6, 7	1,820.85	63.85	133.35	—	—	1,975 14	Gravel, brick, plank, and concrete.
Cherry	3	—	—	—	—	—	116 75	Gravel.
Chestnut	3, 5	152.53	744.51	—	3.97	—	479 58	Partly gravel.
Church	1, 7	34.98	—	87.12	—	—	196 73	Partly laid in 1885.
Clark	5, 6	—	—	—	—	—	45 00	Gravel.
Concord	4	—	—	—	—	—	6 75	Gravel.
Court	2	—	—	—	—	—	7 32	Gravel.
Crafts	2	—	—	—	—	—	159 98	Gravel.
Crescent	1	—	—	—	—	—	144 44	Gravel.
Derby	3	—	—	—	—	—	2 38	Gravel.
Edinboro' . . .	2	91.44	—	—	—	—	38 05	
Eldridge	7	14.11	9.74	11.42	—	—	28 40	

Elliot	5	-	-	-	-	-	26 25	Gravel.
Elm	3	-	-	36.15	-	-	68 95	Partly gravel.
Elmwood	7	7.25	58.71	-	-	-	38 15	
Everett	6	7.73	88.04	-	-	-	5 03	
Fairmont Ave.	1	387.73	-	-	-	-	263 68	
Farlow Park	7	1,088.70	-	-	-	-	*250 06	
Fern	4	-	-	-	-	-	8 21	Gravel.
Floral	5	-	-	-	-	-	28 21	Laid in 1885.
Forest	5	33.57	-	-	-	-	21 82	
Fountain	3	-	-	-	-	-	5 25	Gravel.
Franklin	7	82.46	173 35	31.37	22.30	-	195 76	
Gibbs	6	-	-	-	-	-	26 25	Gravel.
Grove	4	-	-	-	-	-	26 71	Gravel.
Hammond	6	-	-	-	-	-	†33 14	Plank.
Hancock	4	799.09	-	-	-	-	345 90	
Hartford	5	-	-	-	-	-	32 00	Gravel.
Harvard	2	-	-	-	-	-	6 75	Gravel.
Highland Ave.	2	28.06	-	-	-	-	21 00	Gravel.
Highland	3	-	-	-	-	-	138 26	
Hillside Ave.	3	79.22	-	-	-	-	38 50	Gravel.
Homer	6	-	-	-	-	-	31 11	Gravel.
Hovey	1	-	-	-	-	-	6 51	Gravel.
Hunter	3	-	-	-	-	-	10 44	Laid in 1885.
Institution Ave.	6	-	-	-	-	-	8 57	Gravel.
Ivanhoe	7	-	-	-	-	-	11 13	Grading.
Jefferson	7	-	-	-	-	-	23 78	Gravel.
Jewett	1	-	-	-	-	-	2 50	Gravel.
Kenilworth	7	-	-	-	-	-	1 62	Gravel.
Kenrick	7	-	-	-	-	-		
Carried forward,	-	6,039.93	1,140.98	416.91	26 27	67.80	\$7,023 22	

* \$500 additional paid from appropriation for parks.

† Does not include cost of plank walk from Beacon Street to Ward Street, charged to appropriation for miscellaneous expenses, \$642.31.

STREET.	Ward.	SQUARE YARDS OF CONCRETE.				No. of Feet of Flag- stone Crossings.	Cost.	Remarks.
		Sidewalks, New.	Sidewalks, Repaired.	Crossings, New.	Cros'sgs, Rep'rd.			
<i>Brought forward,</i>								
Lake Ave. . . .	5, 6	6,639.93	1,140.98	416.91	26.27	67.80	\$7,023 22	
Lander	3	170.14	40.10	43.80	-	-	124 25	
Lexington . . .	4	-	-	26.29	-	-	23 66	
		-	-	-	-	-	42 70	Partly gravel; partly laid in 1885.
Melrose	4	21.47	-	-	-	-	24 94	
Mill	2	-	-	-	-	-	9 12	Gravel.
Nevada	2	-	-	-	-	-	18 97	Gravel.
Newton High's Sq.	5	991.53	-	-	-	-	644 49	
Newtonville Ave..	1, 2	286.13	-	-	-	-	408 55	Partly gravel; partly laid in 1885.
Nonantum . . .	7	120.73	-	15.73	20.03	-	113 93	Partly gravel.
North	2, 3	-	-	-	-	-	99 37	Gravel.
North School . .	1	-	-	-	-	-	6 50	Gravel.
Orchard	7	-	-	-	-	-	7 47	Laid in 1885.
Otis	2	799.68	-	90 31	-	-	702 45	
Park	7	-	-	-	-	-	113 27	Partly gravel; partly plank; partly laid in 1885.
Park (special) . .	7	-	-	-	-	-	238 55	Gravel by Murray estate.
Parker	5, 6	-	-	-	-	-	291 84	Gravel.
Parsons	2	-	-	-	-	-	55 97	Gravel.
Paul	6	-	-	-	-	-	113 00	Gravel.
Peabody	7	-	-	-	-	-	8 62	Gravel.
Pearl	1	-	-	-	-	-	6 75	Gravel.
Pelham	6	251.05	-	-	-	-	105 48	
Perkins	3	-	-	-	-	-	37 62	Laid in 1885.

Pleasant	6	122.28	-	46.72	-	-	144 69	Partly gravel.
Prescott	2	182.17	40.35	-	-	-	163 15	
Putnam	3	567.11	-	-	-	-	258 68	
River	3	82 72	-	-	-	69.65	125 85	
Rowe	4	-	-	-	-	-	60 87	Gravel.
Sargent	7	454 07	-	-	-	-	238 51	Partly gravel.
Seaverns	4	-	-	-	-	-	69 75	Gravel.
Shaw	3	-	-	39.73	-	-	35 76	
Station	6	91.99	-	-	-	-	434 02	Partly gravel.
Summer	6	295 21	-	7.12	-	-	335 89	Partly gravel.
Temple	3	-	-	-	-	-	3 25	Gravel.
Turner	2	3 03	-	-	-	-	1 97	
Vernon	7	528 21	110.38	36.83	-	-	475 44	
Waban Park	1	-	-	-	-	-	13 16	Gravel.
Walnut Park	1	93 58	-	-	-	-	42 89	
Walnut	2, 5, 6	321 35	-	63.12	-	-	293 91	Partly gravel; partly laid in 1885.
Warren	6	341.29	-	-	-	-	110 92	
Washington	1, 2, 3, 4, 7	447.04	-	96.56	-	92.40	710 96	Partly gravel.
Watertown	1, 2, 3	-	-	-	-	-	69 38	Gravel.
Waverley Ave.	7	408.64	-	-	-	-	318 89	
Webster	3, 4	18.24	-	-	-	-	116 55	Partly gravel.
William	7	50 14	-	14.33	-	-	31 91	
Winter	5	-	-	-	-	-	85 53	Gravel.
Winthrop	3	6.25	-	45.14	-	-	90 57	Partly laid in 1885.
Woodbine	4	-	-	-	-	-	30 76	Gravel.
Woodland Ave.	4	-	-	-	-	-	3 50	Grading.
Grad'g for concrete,	3, 6	-	-	-	-	-	283 77	
Patching	1, 2, 3, 7	-	-	-	-	-	262 52	Gravel.
Carried forward,	-	12,693 98	1,331.81	942 59	46.30	229.85	\$15,093 77	

STREET.	Ward.	SQUARE YARDS OF CONCRETE.				No. of Feet of Flag- stone Crossings.	Cost.	Remarks.
		Sidewalks, New.	Sidewalks, Repaired.	Crossings, New.	Cross'gs, Rep'd.			
<i>Brought forward,</i>	-	12,693.98	1,331.81	942.59	46.30	229.85	\$15,093.77	
Sodding borders .	6	-	-	-	-	-	491.20	
Stock	-	-	-	-	-	231.70	181.35	
Miscellaneous . .	-	-	-	-	-	17.28	15.70	
Totals	-	12,693.98	1,331.81	942.59	46.30	478.83	\$15,782.02	

WATER DEPARTMENT.

THE Water Board during the past year has adopted a new code of rules and regulations. The duties of the engineer will be found defined in the appendix attached to this report.

The State Board of Health commenced during the summer to make a monthly analysis of the water-supply, similar to the analyses being made of all the supplies in the State. Samples have been taken from the Charles River at the pumping-station; from the filtering basin, the driven wells, and from the reservoir,—and forwarded to the laboratory of the State Board of Health once a month.

Previous to this year the condenser of the large pumping-engines drew its water from the pump-well, and so reduced the amount which should have been available for public use. This year a pipe has been laid from the condenser to a well at the bank of the river; and, whenever the supply is low in the pump-well, the water can be drawn directly from the river. This water, after passing through the condenser, runs back into the river. The threshold of the well is level with the bottom of the river, and the bottom of the draught-pipe is still lower, so the supply may be used from this source as long as there is any water in the river.

Surveys have been made, levels taken, and lines and grades

for the laying of water-mains have been established, on fifty-nine streets, covering a total length of six and three-tenths miles. There have been located three hundred and seventy-three services and extensions laid during the year. Plans and diagrams have been made of all special work of this department.

The regular meetings of the Water Board have been attended, and such subjects investigated, or work superintended, as specially directed by the Water Board, Registrar, or Superintendent.

SEWERAGE.

IN accordance with the recommendation of his Honor the Mayor, in his inaugural address, a Joint Special Committee on Sewerage was appointed, consisting of Aldermen John Ward and Seth K. Harwood, and Councilmen N. Henry Chadwick, George Dix, and Heman M. Burr.

The question of providing a means of disposal of the house-drainage, by which it would not become a nuisance, immediately engaged the attention of the committee. I was requested to examine into the efficiency of various methods of purification or utilization of sewerage in use, and to submit to the committee a plan for the disposal of the sewage of the city of Newton. In accordance with their instruction the following places were visited, and the efficiency of systems noted:—

CHELSEA, MASS.—A system of subsidence and screening by upward current through a screen of straw, from four to six inches in thickness, has been in successful operation, on a small scale, for a period of about three years. The sewage from about five hundred inhabitants is taken through about ten thousand feet of small pipe sewers, and discharged into a large brick tank about fifteen feet long and eight feet wide. Across the end of the tank, near the outlet, wire screens are placed horizontally, holding a layer of straw from four to six

inches thick; and the sewage is forced through the straw. When properly cared for, the effluent is clear, and apparently free from solids; but a deposit of a few inches in the marsh-ditches, into which it is discharged, shows that contact with the salt water causes a precipitant which will have to be removed from time to time.

EAST ORANGE, N. J. — Disposal-works and about twenty-three miles of sewers, designed for taking house-sewage alone, were in process of construction. It is intended to discharge the sewage in large settling-tanks, or reservoirs, where it may, or may not, be chemically treated. The overflow is to be discharged on the land, which is thoroughly underdrained, and is specially prepared to receive it. It is expected that the land will be sufficient in area to provide for the sewage without resource to chemical treatment for some time. The town at present contains about thirteen thousand inhabitants.

LONG BRANCH, N. J. — A system of disposal by chemical treatment has been in operation about a year. The works are owned and operated by a private company, which makes an annual charge for connections. At the time of my visit, a large portion of the sewage was received from the hotels along the beach. Although I had no means of determining the amount being cared for, I should roughly estimate it from a hundred thousand to one hundred and fifty thousand gallons per day. The works are located near residences, and, when well cared for, are free from offence; but a second visit showed that, by neglect, they would become an intolerable nuisance. A weak solution of alum is discharged into the sewer about fifty feet from the end, and the sewage is then discharged into large tanks, or reservoirs. The alum, acting as a precipitant, settles the solid matter; and the clari-

fied sewage is passed through two or more coke screens about twelve inches thick. The sludge is mixed with milk of lime, and pressed by Johnson presses.

ATLANTIC CITY, N. J. — Here the disposal is by means of the system known as the West System. The sewage is pumped into large wooden tanks upon a perforated floor, designed to catch all large, solid substances: beneath this floor are alternate layers of meadow-hay and sand, two or more feet thick, upon and through which the sewage passes. When the screen, or filtering-bed, is freshly and properly renewed, I have no doubt but the effluent may be clear, and free from solid. At the time of my visit, I was told that the bed had not been renewed for about three weeks; and the effluent did not appear much cleaner, if any, than the sewage itself. The effluent is discharged in marsh-ditches a thousand or more feet from habitations; and, although there is a large accumulation of precipitant in the ponds and ditches, I am not aware that any direct annoyance has been experienced as yet. The works are owned by a private company, as at Long Branch; and I estimated that they were caring for one hundred and fifty thousand or two hundred thousand gallons per day.

PULLMAN, ILL. — The sewage from about ten thousand inhabitants and several manufacturing establishments is collected, and pumped into a small receiving-tank, or reservoir, from which it is distributed upon the land more or less perfectly prepared to receive it. Two fields, containing respectively sixty and eighty acres, are devoted to cultivated crops, which are irrigated with the sewage. Ten acres from one of the fields are subdivided into a series of flat or filtering beds, which are more thoroughly underdrained, and are in-

tended to receive any excess of sewage over and above what the crops will bear during the growing season, and the entire sewage during the winter. Hydrants are so arranged that the sewage can be discharged, when desirable, on a large, underdrained field, growing grass.

To the superintendent, Mr. Martin, I am indebted for a courteous and hospitable reception, and a willingness to impart all the information in his power as to details of operation. It is evident that the financial success of the farm is largely due to his intelligent and business-like management.

Plans were being perfected for regrading one of the fields, so that more satisfactory results from the use of the sewage can undoubtedly be obtained.

Samples of the sewage as discharged on the fields from the hydrants, from the manholes into which the sub-drains from the filter-beds and irrigation-fields discharge, and from a well six feet deep and twenty feet from the line of a drain, were taken and sent to the Massachusetts State Board of Health, and analyzed with the following results: —

PARTS IN 100,000.

SAMPLE.	No.	Date of Examination.	Free Ammonia.	Albuminoid Ammonia.	Chlorine.	Nitrogen as Nitrites and Nitrates.	Nitrites.
Sewage discharged on land,*	1	July, 26	2.300	0.3200	1.98	None.	None.
Subdrain f'm filtration bed,†	2	26	0.8500	0.0480	2.31	1.56	None.
“ “irrigation field,†	3	26	0.0026	0.0108	3.78	0.65	Heavy
Well 6 feet deep, 20 feet from line of drain † . .	4	26	0.0900	0.0166	1.78	0.033	Very heavy.

* Contained sulphuretted hydrogen.

† Had considerable lime.

As my visit was made in the middle of July, at the time of a severe drought, and at a period of high temperature, the

flow from the underdrain must have been almost, if not entirely, the effluent from the filtered sewage.

BRYN MAWR, PENN. — This system is an example of sub-surface irrigation on a small scale. The sewage from a large hotel, containing about three hundred and fifty guests, was disposed of through small tiles laid from twelve to fourteen inches below the surface. The land through which these tiles were laid contained about three acres, and was sub-drained by drains laid about twenty-five feet apart, from three to five feet deep, and discharged into open ditches leading to a brook. The effluent from some of these drainage-pipes was considerably discolored, and had an offensive odor.

WAYNE, PENN. — This system is an example of the ability of vegetation to take up sewage discharged on the surface of the ground. The sewage from a portion of the village is collected in sewers, and discharged into a large cesspool, or settling-tank, located from one-third to one-half of a mile from residences. The overflow from the tank spreads over the surface of a small piece of open ground, and from thence runs into and through a piece of second-growth timber. At the time of my visit, the vegetation showed a rank and excessive growth. No especial offence was noted in the atmosphere, but the surface of the ground for a considerable distance from the point of discharge was reeking with filth.

To the commissioners, engineers, superintendents, and employees of the various works visited, I am especially indebted for attentions shown me, and for information furnished. On Nov. 14 the committee submitted a report of progress, with recommendations, upon which no action has been taken. (For report, see Appendix.)

PUBLIC PROPERTY.

UNDER the direction of the Joint Standing Committee on Public Property, plans, estimates, and specifications were made for widening the main doorway at Steamer-House No. 1. The arch over the doorway was supported, the old brick jambs on each side cut out, and new jambs built up six inches back, making the doorway one foot wider. New doors were made and hung, and the fenders, threshold, and paving altered to fit the new doorway.

At Steamer-House No. 2, the action of the weather has loosened the mortar holding the bricks in the tower just below the bell-deck: plans and specifications were prepared for strengthening the tower.

At the Franklin Schoolhouse, the condition of the out-building had become very offensive. It was decided to fill up the privy-vaults, and to place tubs under the seats, which can be removed at stated times through doors in the outside of the building. Five closets for scholars, and one closet for teachers, were arranged in each side of the building; and a set of eight soapstone urinals were set in the boys' side of the building. Ventilation-pipes were run from the seat of each closet into one large vent-pipe, which was carried above the roof of the main schoolhouse. Lattice-work was put in the sides of the shed connecting the out-

building and the main schoolhouse, so that any odors coming from the outbuilding would be intercepted before reaching the basement of the schoolhouse.

At the Oak-hill Schoolhouse, surveys and estimates were made for draining the cellar, and raising the building and grounds.

BOARD OF HEALTH.

THE City Engineer having been re-appointed as Agent of the Board of Health for the Inspection of Plumbing, the work was continued as outlined in the report of last year. During the year the meetings of the Board have been attended, 1,700 inspections have been made upon 260 houses, and 49 letters have been written, besides the usual verbal requests, decisions, and answers to inquiries.

As outlined in the last report, more time has been given to conversation with the plumbers on the work; and requests for alterations in the work have been made directly, instead of formally by letter. This arrangement has served to reduce the friction caused by a peremptory letter, and any misunderstandings are avoided or corrected at the time.

The same assistants have been detailed as inspectors, the houses have been visited oftener, and at no stated intervals of time. The result of the increased acquaintance between the inspectors and the plumbers has been a better understanding of the intent of the rules of the Board. I am pleased to say that all the plumbers during the past year have shown a desire to comply with the rules, and co-operate with the Board.

ACKNOWLEDGMENTS.

I would respectfully tender my acknowledgments to his Honor the Mayor, the Water Board, the Board of Health, and the various committees of the City Council, for the support which they have given.

I wish also to acknowledge the courtesies shown by the various heads of departments, and the co-operation of the assistants of this department.

Respectfully submitted.

ALBERT F. NOYES,
City Engineer.

REPORT OF CITY ENGINEER ON ESTABLISHING GRADE FOR LAUNDRY-BROOK DISTRICT.

CITY ENGINEER'S OFFICE, CITY HALL.

WEST NEWTON, MASS., April 4, 1887.

TO THE HONORABLE BOARD OF MAYOR AND ALDERMEN.

Gentlemen, — In compliance with an order from the Board of Mayor and Aldermen, passed Feb. 7, 1887, — “That the City Engineer be requested to make a survey of the territory bordering on Laundry Brook, between Walnut Street and the Boston and Albany Railroad, Ward 2, and report to this Board what portion of said territory is subject to overflow from brook or surface water; how much of said territory should be raised by filling; what work, if any, should be done upon Laundry Brook; and recommend a grade in said district for drainage and sewerage, below which no cellar or basement cellar shall be constructed,” — I would respectfully report that I have caused surveys to be made of the territory bordering on Laundry Brook, as set forth in the aforesaid order, plans of which are hereto annexed.

In order to consider and intelligently answer the various requirements of the balance of the order, I will state briefly the conditions at present existing, and suggest certain modifications which will materially affect any action which you might feel would be wise to take.

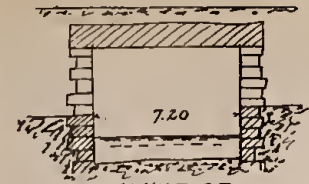
CROSS SECTIONS OF THE CHANNEL OF LAUNDRY BROOK

Newton, Mass. April 1887.

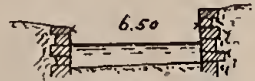
Scale 8 Feet to an inch.

Albert F. Noyes, City Engineer.

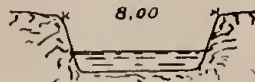
Note, Velocity and Capacity are given in feet per second.



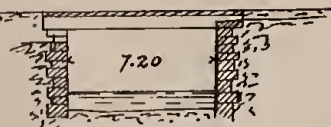
WALNUT ST.
Sta. 95+90
Culvert, Vel. 8.37 Ft. Cap. 348 cu. Ft.
Brook " 6.72 " 116 "



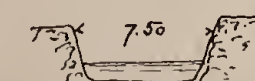
Sta. 93
Brook, Vel. 6.61 Ft. Cap. 84.5 cu. Ft.



Sta. 92+50
Brook, Vel. 7.46 Ft. Cap. 176 cu. Ft.



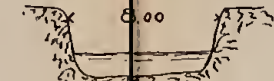
GAY ST.
Sta. 85+57
Bridge, Vel. 7.78 Ft. Cap. 229.68 cu. Ft.
Brook, " 7.47 " 187.00 "



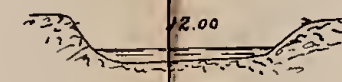
Sta. 83+50
Brook, Vel. 7.24 Ft. Cap. 162.90 cu. Ft.



CABOT ST.
Sta. 82+70
Culvert, Vel. 7.72 Ft. Cap. 223.88 cu. Ft.
Brook, " 7.00 " 117.57 "



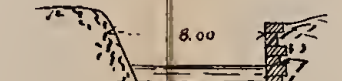
Sta. 81
Brook, Vel. 7.66 Ft. Cap. 214.70 cu. Ft.



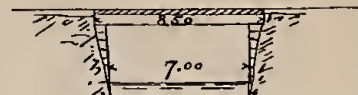
Sta. 80
Brook, Vel. 6.56 Ft. Cap. 105 cu. Ft.



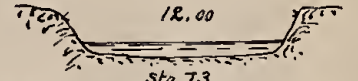
HARVARD ST.
Sta. 79+09
Culvert, Vel. 6.90 Ft. Cap. 183.62 cu. Ft.
Brook, " 8.49 " 314.00 "



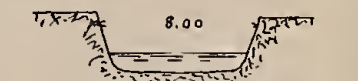
Sta. 77
Brook, Vel. 5.98 Ft. Cap. 125.55 cu. Ft.



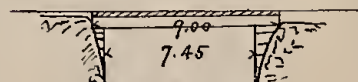
CLARENDON ST.
Sta. 75+54
Bridge, Vel. 6.86 Ft. Cap. 178.72 cu. Ft.
Brook, " 6.99 " 195.72 "



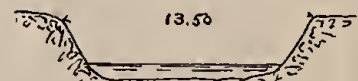
Sta. 73
Brook, Vel. 6.09 Ft. Cap. 134 cu. Ft.



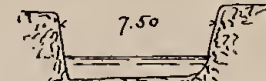
Sta. 72+50
Brook, Vel. 6.10 Ft. Cap. 122 cu. Ft.



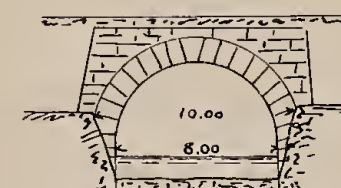
Sta. 71+75
Bridge, Vel. 7.10 Ft. Cap. 211.58 cu. Ft.
Brook, " 6.82 " 174.00 "



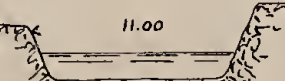
Sta. 66
Brook, Vel. 6.76 Ft. Cap. 177.67 cu. Ft.



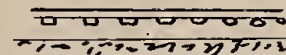
Sta. 62+50
Brook, Vel. 7.38 Ft. Cap. 276.00 cu. Ft.



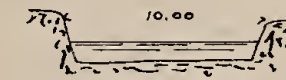
NEWTONVILLE AVE.
Sta. 59+25
Culvert - Full - Vel. 6.37 Ft. Cap. 213.35 cu. Ft.
" - Top of Banks " 6.48 " 140.00 " "
Brook " 6.50 " 158.00 "



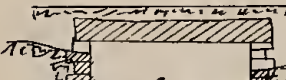
Sta. 55+50
Brook, Vel. 7.00 Ft. Cap. 210.00 cu. Ft.



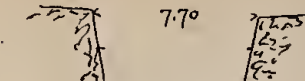
BOSTON & ALBANY R.R.
Sta. 54+96
Culvert - Full - Vel. 6.29 Ft. Cap. 232.56 cu. Ft.
Brook " 6.23 " 124.50 "



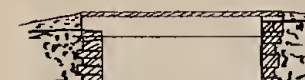
Sta. 53
Culvert, Vel. 5.78 Ft. Cap. 103.60 cu. Ft.



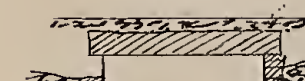
WASHINGTON ST.
Sta. 50+64
Culvert - Full - Vel. 7.88 Ft. Cap. 366.00 cu. Ft.
Brook " 7.41 " 260.90 "



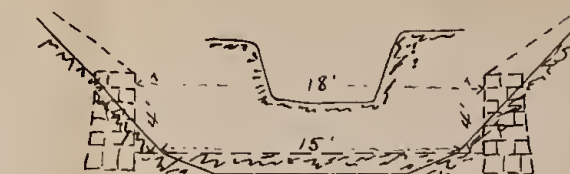
Sta. 48+50
Brook, Vel. 7.16 Ft. Cap. 220.80 cu. Ft.



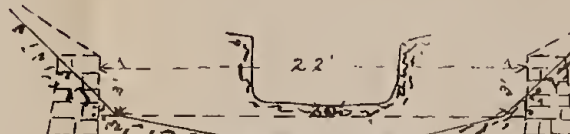
CATHOLIC CH. FOOTWAY
Sta. 48+07
Bridge, Vel. 8.07 Ft. Cap. 419.24 cu. Ft.
Brook " 8.12 " 439.48 "



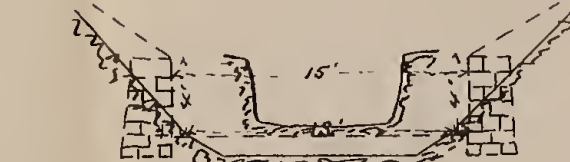
ADAMS ST.
Sta. 47+02
Culvert, Vel. 7.76 Ft. Cap. 335.54 cu. Ft.
Brook " 7.56 " 290.58 "



PROPOSED SECTION 3
GRADE 0.20 PER 100
Vel. 6.96 Ft. Cap. 501 cu. Ft.



PROPOSED SECTION 2
GRADE 0.30 PER 100
Vel. 7.86 Ft. Cap. 519 cu. Ft.



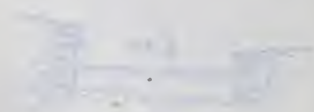
PROPOSED SECTION 1
GRADE 0.30 PER 100
Vel. 8.27 Ft. Cap. 496 cu. Ft.



1. 1000 sq ft

2. 1000 sq ft

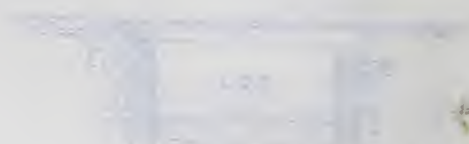
3. 1000 sq ft



4. 1000 sq ft



5. 1000 sq ft



6. 1000 sq ft

7. 1000 sq ft



8. 1000 sq ft

9. 1000 sq ft



PLAN OF
LAUNDRY BROOK
DISTRICT

Newton Mass.
April 1887
Albert F. Noyes
City Engineer
Scale 100 ft. to an inch.

Laundry Brook, so called, has its source in the swamps near Hammond Pond and in Cold-spring Swamp near Newton Highlands.

It has a water-shed above Walnut Street of about 2,210 acres, and above Cabot Street of about 2,460 acres. About one-half is at present swamp or woodland; and the balance is, for the most part, well-drained, improved land, discharging quickly into the stream the water which falls upon it.

The water flowing in the brook comes from the rain which falls on this water-shed, and reaches the stream either by direct flow from the surface, by sub-drains, or by infiltration through the soil. It is evident that the extent of the territory liable to be overflowed depends upon the amount of rainfall, duration of storm, the saturation or condition of the ground, and the size and condition of various portions of the channel of the brook.

Referring to the various formulæ proposed by engineers for computing the maximum flow of streams, as applied to Laundry Brook, I find results varying greatly one with the other, which is not surprising, from the fact that they are obtained from experiments made in portions of the country where the physical conditions vary greatly one from the other.

A commission, consisting of James B. Francis, C. E., Eliot C. Clarke, C. E., and Clemens Herschel, C. E., appointed by the mayor of the city of Boston, to report a plan for the prevention of floods in the valley of Stony Brook, in the consideration of the question of the amount of water to be provided for, concludes that it should be equivalent to a rainfall, or rainfall and melting snow of twelve inches in twenty-four hours, and that the maximum flow

in the stream would be equal to about one-half the rate of the rainfall. This rule applied to the Laundry-brook watershed would require a capacity providing for five hundred cubic feet per second.

From Feb. 10 to 14, 1886, there fell on this water-shed 6.09 inches of rainfall, in addition to which it is estimated that there was at least two inches of water from melted snow, making a total of 8.09 inches; but between 11 P.M. Feb. 11, and 11 P.M. Feb. 12, 4.45 inches of rain fell, making a total with melted snow of 6.45 inches to be provided for in twenty-four hours. I have no record of the height to which the water flowed; but all of the culverts were surcharged, and the brook overflowed its banks.

By reference to the accompanying sheet, showing a cross-section of the culverts and portions of the brook between Walnut Street and Adams Street, together with an estimate of the capacity of the brook, of each culvert to a level of the banks of the brook, and of the full area of the culverts, it will be seen that the above estimate closely approximated the facts.

As all of the swamp and woodland can be drained, and is each year being developed more and more, so will the stream each year receive the rainfall more rapidly, and the area liable to be overflowed increased, unless ample provision is made for its disposition. With the brook and culverts in their present condition, I estimate that the following area of land is liable to be overflowed, and should be filled above the flood-line:—

Between the Boston and Albany Railroad and Newtonville Avenue	3.28 acres
Between Newtonville Avenue and Harvard Street,	31.81 “
Between Harvard Street and Walnut Street	13.86 “
Total	48.95 “

But the filling of this land would only serve to contract the space which has heretofore served to store the water, and cause a rise in its level in excess of that which has taken place heretofore, and cause the overflowing of lands and estates beyond the reach of any previous flow.

In establishing a grade for this district below which no cellar or basement cellar shall be constructed, it is intended that it will be at such a level that it can be readily drained, and not overflowed.

In the absence of the adoption of a system of sewerage and drainage by the city, for this district, a point above the high-water mark of Laundry Brook must be the lowest grade for buildings near the brook; and this should rise on a slight gradient, as its distance from the brook increases. The brook with its present dimensions is liable to frequent overflows, which will increase from year to year. Should it be widened so as to take the full discharge of the water-shed when flowing four feet deep, the cellar-grade of the territory could be established at a level with the adjoining streets, and would require the brook to be fifteen feet wide.

When flowing three feet deep, which is the general height of the banks, the brook should be twenty-two feet wide, and the cellar-grade could be established at a level not lower than said banks.

By *deepening* and widening the brook, the cellar-grade can

be lowered just so much as the level of the maximum flow-line of the brook is lowered.

Should the brook be deepened so as to have a fall of one foot in five hundred feet, and have a maximum flow of four feet depth, the width should be eighteen feet, and would be equivalent to raising the district from two to three feet.

The first suggestion would involve the raising of the district from one to three feet, the brook widened to a width of fifteen feet, the culverts rebuilt, and, aside from the cost of filling and land-damages, is estimated to cost, with unvalled banks, —

For excavation	\$3,000 00
For rebuilding culverts	30,000 00
Total	<u>\$33,000 00</u>

The second suggestion would involve the widening of the brook to a width of twenty-two feet, and the rebuilding of the culverts: aside from land-damages, it is estimated to cost, with unvalled banks, —

For excavation	\$8,000 00
For rebuilding culverts	38,000 00
Total	<u>\$46,000 00</u>

The third suggestion would involve the deepening of the brook from nothing at the Boston and Albany Railroad to three feet at Cabot Street and four and one-half feet at Walnut Street, and widened to a width of eighteen feet. This is estimated to cost, aside from land-damages, with unvalled banks, —

For excavation	\$10,000 00
For rebuilding culverts	36,000 00
<hr/>	
Total	\$46,000 00

In the consideration of any of the above suggestions, if it should be deemed necessary to wall the banks of the brook, I estimate the cost, —

By the first suggestion to be	\$21,000 00
By the second suggestion to be	16,500 00
By the third suggestion, with the walls four feet high (the estimated height of the flow-line), to be	21,500 00

Respectfully submitted.

ALBERT F. NOYES,
City Engineer.

REPORT OF JOINT SPECIAL COMMITTEE ON SEWERAGE.

NEWTON, MASS., NOV. 14, 1887.

TO THE HONORABLE CITY COUNCIL.

Gentlemen, — The Joint Special Committee on Sewerage, to whom was referred the subject of the sewerage of the city of Newton, has the honor to submit the following report: —

It has doubtless become apparent to every one that has given thought to the question of the necessity of providing means for the removal of the sewage from the more thickly settled portions of the city, that, from both an economic and a sanitary stand-point, the time has arrived when measures should be taken for the immediate relief of such portions of the city as are most affected by the present imperfect system of disposal.

Previous committees of the City Council appointed to consider this question have agreed that a system of sewers should be provided; but they have been unable to determine upon a method of disposal which they felt could be introduced without giving offence, or creating a nuisance, to our own citizens as well as those of adjoining cities.

In 1876 a commission, consisting of Charles Robinson, jun., E. W. Converse, and J. Franklin Fuller, was appointed by

the City Council to consider this question, and presented in December, 1879, a very able report, recommending the construction of sewers to provide for the discharge of a large portion of the rainfall and surface-drainage, and the house-sewage, into the Charles River, at, or nearly opposite, the Watertown Arsenal. But at this time the river had already become so foul from the sewerage discharge of the cities of Cambridge, Somerville, and Boston, and the town of Brookline, as to make it apparent that measures would soon have to be taken to prevent further discharge of sewage in a crude state.

The city of Boston was then considering some method of relief, and has since constructed intercepting sewers discharging in Boston Harbor, off of Moon Island. This has resulted in a greatly improved sanitary condition of that portion of the city of Boston located near the river, and has made desirable for residences portions of that city which had experienced great annoyance from the foul odors arising from the river.

The State government, foreseeing that the continuance of this discharge of crude sewage into the river, with such additions and extensions of the various systems as were constantly being made, would tend to make the valley of the lower Charles River unhealthy, passed a resolve May 11, 1881, requesting the Governor and Council to report a plan for the drainage of the Mystic and Charles River Valleys. This report was submitted in 1882, and recommended that intercepting sewers be constructed along the banks of the Charles River which would receive the sewage from the cities and towns on its borders; the sewage to be ultimately discharged in deep water at Moon Island.

A second State commission appointed in May, 1884, to consider the question, reported in December, 1885, a similar plan to that of the first commission. This plan was the result of the most careful study by the ablest engineers of this country, and has received the indorsement of the City Council of Newton for two successive years; a special committee having been appointed to appear before the Committee on Drainage, of the State Legislature, and urge that the plans proposed by the commission be carried out. At the hearings held before this Committee, the execution of the proposed plan was strongly opposed by the cities of Cambridge and Somerville. These cities have their sewer-systems practically constructed, discharging the sewage by numerous outlets directly into the Charles River; and to avail themselves of the sewers constructed under the proposed plans would require a very large expenditure, in addition to their proportional part of the main system, to make the necessary changes in their present systems. This opposition is so strong that it has seemed to your Committee extremely improbable if any measures for relief can be undertaken by the State for a number of years.

In the mean time your Committee requested the City Engineer to examine and report if some plan could not be proposed for the disposal of the sewage of the city, without creating a nuisance. Under the direction of the Committee, the City Engineer has visited, closely inspected the works, and noted the results attained at the various places in this country where special methods of disposal were in operation. From the result of these visits, and from the study of reports upon other works which have been in a greater or less degree successful, it has seemed to your Committee that by a crude

chemical treatment the sewage can be sufficiently clarified so that the effluent can be discharged into the river below Watertown, without giving offence; and that such works or tanks as may be necessary for the treatment of the sewage can be constructed at so comparatively small expense, that should the sewers contemplated by the Metropolitan Drainage Commission be constructed at some later time, a connection can be made at very little additional cost.

Your Committee has given considerable thought and study to many of the details of construction, such as methods, cost, etc.; also as to method of payment of the cost of the sewers which shall be just and equitable to all, and be a hardship to as few as possible. The means at the disposal of the Committee have been too limited to perfect the plans so as to present them in detail; but it may not be out of place to state briefly some of the conclusions arrived at by the Committee, subject to such modifications and changes as more careful study may show to be desirable.

The city of Newton covers an area of about twenty square miles. Topographically, the surface is very uneven, and is traversed by a number of rapid running brooks or streams discharging into the Charles River. The population is distributed somewhat unevenly, and is almost entirely residential in character: the estates are so subdivided as to preclude the probability of it becoming urban in character for a long period. The traffic on its streets is, and will probably continue to be, light, so that the wash from them cannot be so offensive as to prevent its discharge either into the streams or the river without special treatment.

It would therefore seem, that, in view of the fact that all sewage must be treated or pumped in order to be discharged

into deep water, it is advisable to separate the house-sewage for special treatment, and that the storm-water be conveyed by separate drains to the nearest stream.

Some portions of the city are so sparsely populated that the necessity for a system of sewerage has not become apparent; but the demand from some of the larger villages has become imperative; and in some sections the cost of the removal of the sewage, in the imperfect manner it is at present performed, is fully equal to a good interest on the whole cost of the sewers. As these districts increase in population, then the sewers will require to be extended until the system has practically spread itself over the entire city.

Should a more careful study of the question as applied to Newton show that the best interests of the city would be served by the construction of sewers designed to carry house-sewage alone, the Committee feel, that, by assuming the cost of maintenance and the treatment of the sewage, the city as a whole would fully pay for any benefit it might receive, and that it would be equitable for the estates benefited to bear the cost of constructing the sewers and disposal-works.

In order that the system may be designed so that the greatest economy in construction shall be attained, and so that all the parts shall blend, and be adequate to provide for the whole system when completed, a most careful study of the question will have to be made. Surveys should be made and levels taken in addition to those now in the City Engineer's office. It would also be desirable to examine in detail the results of the latest investigations in the treatment of sewage, in order to insure the city the best possible results.

We would therefore recommend the appropriation of the sum of three thousand dollars towards the cost of additional

surveys, plans, and designing of the system; and that the City Engineer be requested to make the additional surveys, and submit as soon as possible a detail design of the system; also that he be authorized, with the approval of the Committee, to employ such expert service as he may deem necessary.

Respectfully submitted.

JOHN WARD, *Chairman*.

S. K. HARWOOD.

N. H. CHADWICK.

G. D. DIX.

ORDINANCES RELATING TO THE CITY ENGINEER'S DEPARTMENT.

ORDINANCE IX.

City Engineer.

Office estab- lished.	SECTION 1. The office of City Engineer is hereby established.
Duties.	SECT. 2. He shall have charge of all the plans of the streets, drains, sewers, water-works, and lands of the city; and shall classify them, and put them in convenient form for reference and use.
Charge of plans.	He shall make all plans, surveys, measurements, and levels pertaining to the streets, drains, sewers, lands, water-works, etc., and perform such other duties properly belonging to his office as may be required of him by the Mayor, the Board of Aldermen, or any committee of the City Council. Drains and sewers shall be constructed and repaired under his supervision and direction.
Make plans, surveys, etc.	
Orders, etc.	SECT. 3. He shall prepare all orders, resolves, and other papers relating to street widenings, extensions, and alterations, which the Joint Standing Committee on Highways may require, and shall furnish the City Solicitor with descriptions of lands at his request.

SECT. 4. He shall keep a set of books showing Accounts.
all the debits and credits to every estate, the
whole or a portion of which may be taken to lay
out, widen, or extend a street, or which may be
assessed under any betterment law; and all bills
for assessments made under any betterment law
shall be made out by him, and deposited with the
City Treasurer for collection.

SECT. 5. He shall annually, in the month of Reports.
January, present to the City Council a report for
the year ending on the last day of December pre-
ceding, giving in detail the cost of all special work
of the highway department, the expenses of his
own department, the number of persons employed
therein, and a description of the work done.

ORDINANCE XVI.

Highway Department.— Streets and Ways.

SECT. 4. Under the direction of the City En- Drains and
sewers.
gineer, he (the Superintendent of Streets) shall
attend to the making and repairing of drains and
sewers.

ORDINANCE XXIV.

Buildings.

SECT. 5. No person shall proceed to erect or Applications
to City Engi-
neer for street
lines and
grade.
make alterations in the location or grade of any
fence, wall, or building, a part of which is to abut
upon a public street, lane, square, or alley, with-
out first applying to the City Engineer for the
lines and grade of the street, lane, square, or alley
upon which he intends to build. Such application

shall be made at least fifteen days before the work is begun; and the City Engineer shall within said time furnish the required lines and grade without charge, if in his power so to do. In default of such application the city shall be discharged from all responsibility for damages resulting from such default.

Violation.

SECT. 6. Whenever the City Engineer ascertains that any structure has been placed in violation of the preceding section, he shall at once give notice to the Mayor and Aldermen, in writing, of such violation; and, upon receipt of such notice, the Mayor and Aldermen may forthwith issue an order to the party offending, directing that the structure be removed within the time therein specified; and in case of non-compliance, the Mayor and Aldermen shall direct that the incumbrance be removed at the expense of the delinquent.

Penalty.

SECT. 7. Whoever violates any provision of the two preceding sections of this ordinance, shall be liable to a fine not exceeding twenty dollars.

By vote of the Board of Health, June 8, 1885, the City Engineer was appointed Agent of the Board for the Inspection of Plumbing, and authorized to enforce the following rules of the Board:—

RULES AND REGULATIONS
OF THE
BOARD OF HEALTH.

TO BE ENFORCED BY THE AGENT FOR THE INSPECTION
OF PLUMBING.

RULE 1. Every tenement shall be provided with a suitable water-tight privy-vault, or with a water-closet connected with a water-tight underground drain of proper size to carry off the contents, and with a similar drain to carry off the waste-water to a cesspool.

b. Every privy-vault or cesspool shall be built in a thorough and substantial manner, and located so that the inside of the same shall be at least three feet distant from the line of any adjoining lot or street. Cesspools must be of sufficient size to contain at least eighty cubic feet, eighteen inches below the surface of the ground, and, when not water-tight, must be at least twenty feet from the cellar-wall of any tenement or dwelling, and two rods distant from any well, spring, or other source of water-supply used for culinary purposes.

RULE 17. Unless the Board of Health shall permit otherwise, the drainage-system of a hotel, tenement-house, dwell-

ing-house, stable with sleeping-apartments, or factory, in the city of Newton, Mass., shall be constructed as follows:—

SECT. 1. — FILING PLANS AND SPECIFICATIONS. No person shall proceed to construct, add to, or alter any portion of the drainage-system of said buildings (except to repair leaks), until they have filed at the office of the City Engineer, upon blanks in such form as the Board of Health shall order, a notice of the work to be performed. No person shall commence work on such drainage or plumbing until the plans are approved by the Board of Health. Plans and specifications will be approved or rejected within five days of the time of filing. After a plan has once been approved, no alteration of the same will be allowed except on a written application of the owner.

SECT. 2. — NOTICE. The Board of Health must be notified when any work is ready for inspection, and all work must be left uncovered and convenient for examination until inspected and approved.

SECT. 3. — INSPECTION. All plumbing-work in new buildings, or new work in old buildings, shall be tested by the Board of Health, with the hydraulic or such other test as the Board may direct; and in case the work does not stand the test, and the same is not repaired within ten days, the water shall be turned off, by order of said Board, and not let on again till the plumbing has been pronounced satisfactory by the said Board.

SECT. 4. — MAIN DRAIN. Every building herein referred to shall be separately and independently connected with a common sewer or cesspool.

That portion of the house-drain which is outside of the building, and more than four (4) feet from the foundation-

walls, shall be constructed of extra heavy cast-iron soil-pipe, or of the best quality of vitrified drain-pipe.

That portion of the house-drain which is inside the walls, or under the building, and that portion outside of the building, and within four feet of the foundation-wall, must be of iron pipe with a fall of at least one-half ($\frac{1}{2}$) inch to the foot. It must run along the cellar-wall, and be securely fastened thereto, or suspended from the floor-timbers in iron hangers.

When impracticable, it shall be laid in a trench, beneath the basement or cellar floor, provided with movable covers, and walled up of such a width as to admit of access to all joints.

SECT. 5. — TRAPS. The house-drain must have a trap located beyond all house connections, of the same size as the drain, provided with a hand-hole for convenience in cleaning.

SECT. 6. — FRESH-AIR INLETS. There must be a fresh-air inlet-pipe entering the drain on the house-side of the main trap, of not less than four inches internal diameter, extending therefrom to the external air, and terminating at a point not less than three (3) feet above the ground, away from all windows.

SECT. 7. — SOIL-PIPE. All pipes receiving the discharge from water-closets must be of iron at least four (4) inches internal diameter, and continued of undiminished size at least two (2) feet above the roof, away from all windows, and left open at the top.

SECT. 8. — BRANCHES. All branches over ten feet in length must be continued of undiminished size to the roof, and carried up at least four inches internal diameter through the roof, and project at least two feet above it, and left open.

SECT. 9. — CONNECTIONS. All connections with horizontal pipes shall be made by $\frac{1}{2}$ bends and Y branches, and all changes in direction shall be by curved pipe. No trap shall be placed at the foot of a vertical soil-pipe.

SECT. 10 — WASTE-PIPES. All waste-pipes from sinks, basins, bath-tubs, wash-tubs, etc., of two inches or less internal diameter, shall be of lead: all over two inches must be of iron.

SECT. 11. — RAIN-WATER CONDUCTORS. Wherever rain-water conductors are connected with any pipe of the drainage-system of the house, that portion within the house, or under ground, or five feet above the ground, to be of cast-iron pipe with lead joints, and in all cases provided with an extra deep trap where it enters the house-drain. No rain-water conductor shall be used as a soil-pipe.

SECT. 12. — TRAPS. Every pipe connecting a water-closet with the soil-pipe must be trapped close to the connection with the water-closet. Every waste-pipe must be trapped close to the fixture, and separately from any water-closet.

SECT. 13. — SAFE-WASTES. All waste-pipes from safes under fixtures must be run separately to basement or cellar, and left open: in no case must they be connected with the soil-pipe or any other waste-pipe.

SECT. 14. — REFRIGERATOR-WASTES. No waste-pipe from a refrigerator or other receptacle in which food or provisions are stored shall be connected with a drain, soil, or other waste pipe, but must be separated therefrom by an open sink or tray furnished with a trap.

SECT. 15. — TANK-OVERFLOW. All overflow-pipes from tanks must be left open and in sight. In no case shall it be run into a soil or waste pipe.

SECT. 16. — VENTILATION OF TRAPS. All traps must be furnished with a vent-pipe run from the crown of the trap. The vent-pipe from a water-closet trap must be at least two inches in diameter: other vent-pipes must be as large as the waste-pipe from the trap. All ventilation-pipes from a soil or waste pipe must be run, of undiminished size, separately or combined together, to the roof, and carried up, at least four inches internal diameter, through the roof, and at least two feet above it, and left open, or may be run into a soil-pipe above all connections. In no case shall a soil, waste, or ventilating pipe from a soil or waste pipe be connected with a chimney. No brick, earthenware, or sheet-metal pipes shall be used for ventilation-pipes from a soil or waste pipe.

SECT. 17. — CAST-IRON PIPES. All cast-iron pipes must be free from holes and other defects, of a uniform thickness of not less than $\frac{1}{8}$ inch for a diameter of four inches or less, and not less than $\frac{5}{32}$ of an inch for 5 and 6 inch pipe, and shall have the full weight of the following table for the corresponding diameters:—

Internal diameter.	Ordinary pipe.		Extra heavy pipe	
2 inches . . .	3 $\frac{1}{2}$ lb. per ft.	. . . .	5 $\frac{1}{2}$ lb. per ft.	
3 inches . . .	4 $\frac{1}{2}$ “	“	9 $\frac{1}{2}$ “	“
4 inches . . .	6 $\frac{1}{2}$ “	“	13 “	“
5 inches . . .	8 “	“	17 “	“
6 inches . . .	10 “	“	20 “	“

And before being connected shall be thoroughly coated inside and out with coal-tar pitch, applied hot by immersion, or some equivalent substance satisfactory to the City Engineer.

SECT. 18. — QUALITY OF JOINTS. Every joint in earthen pipe shall be made in hydraulic cement, care being taken

that the inside of the joints and of the pipe is properly cleaned out before connection is made with the house. Every joint in lead pipe shall be made in solder, and wiped joints are to be used where practicable. Every joint of an iron and a lead pipe shall be made by a brass ferrule of same size as lead pipe, set in the hub of the branch of the iron pipe, and calked with lead; the lead pipe to be attached to the ferrule by a wiped solder joint. Every joint in a cast-iron bell and spigot pipe to be made with packed oakum and molten lead well calked, at least $1\frac{1}{2}$ inches deep, and made water and air tight, and no paint or putty shall be allowed until tested. Where screw-joints are used, they shall be packed in red-lead, and made steam-tight.

SECT. 19. — WATER-CLOSET SUPPLY. No water-closet shall be supplied directly from the house supply-pipe, but shall be supplied from a special water-tank or cistern used for no other purpose.

RULE 18. Whoever shall violate any provision of these rules, shall be liable to a fine not exceeding one hundred dollars, and a like penalty for every day after the first offence shall be committed.

RULES AND REGULATIONS OF THE NEWTON WATER DEPARTMENT.

RELATING TO THE CITY ENGINEER.

SECTION 2.—ORGANIZATION.

1. Besides the offices of Water Registrar and Superintendent established by ordinance, the permanent organization of the department shall be as follows:—

A Civil Engineer, an Inspector of Meters and Fixtures, a Pumping Engineer, a Fireman, a main-pipe Foreman, a service-pipe Foreman, three Teamsters, and a Clerk in the office of the Water Board. It is understood that the City Engineer is the Civil Engineer of this department.

SECTION 6.—ENGINEER.

1. Upon receipt of orders therefor from the Board, the City Engineer shall, within twenty-four hours, establish lines and grades for the extension of all water-mains, and shall take such measurements of main and service pipe extensions, and their appurtenances, as will enable him to correctly locate and plat the same: he shall keep the returns from the Pumping Engineer closely posted up, and shall plat therefrom a diagram showing the engine duty.

2. He shall make a daily report to the Water Registrar of the progress and condition of the work under his charge.

3. He shall perform such other duties as the Board may from time to time by vote require of him.

City of Newton.

ANNUAL REPORT
OF
THE CITY MARSHAL

FOR THE YEAR ENDING DEC. 31, 1887.



PRESS OF RAND AVERY COMPANY,
117 FRANKLIN STREET, BOSTON.

1888.



CITY MARSHAL'S REPORT.

OFFICE OF CITY MARSHAL,
WEST NEWTON, January 2, 1888.

TO HIS HONOR THE MAYOR AND THE HONORABLE CITY COUNCIL
OF THE CITY OF NEWTON:—

I have the honor to submit to you an account of the work
performed by the Police Department during the year 1887.

ARRESTS.

Whole number of arrests	.	.	.	.	.	.	.	574
Arrests on warrants	.	.	.	.	.	.	.	192
Arrests without warrants	.	.	.	.	.	.	.	382
Held for trial	.	.	.	.	.	.	.	537
Released without trial	.	.	.	.	.	.	.	37
Males	.	.	.	.	.	.	.	524
Females	.	.	.	.	.	.	.	50
Americans	.	.	.	.	.	.	.	264
Foreigners	.	.	.	.	.	.	.	310
Residents	.	.	.	.	.	.	.	379
Non-residents	.	.	.	.	.	.	.	195
Minors	.	.	.	.	.	.	.	121

ARRESTS AT EACH POLICE STATION.

Station No. 1, Newton	.	.	.	.	.	.	56
Station No. 2, Nonantum	.	.	.	.	.	.	69

Station No. 3, West Newton	374
Station No. 4, Newton Centre	75

574

ARRESTS MADE EACH MONTH.

	Males.	Females.	Total.
January	31	1	32
February	19	5	24
March	34	0	34
April	31	1	32
May	46	6	52
June	57	10	67
July	56	1	57
August	46	5	51
September	49	3	52
October	55	7	62
November	59	7	66
December	41	4	45
	<hr/> 524	<hr/> 50	<hr/> 574

LOCAL POLICE WORK.

Arrests by officers on duty at Newton	99
“ “ “ “ “ Nonantum	86
“ “ “ “ “ Newtonville	73
“ “ “ “ “ West Newton	144
“ “ “ “ “ Auburndale	16
“ “ “ “ “ Lower Falls	18
“ “ “ “ “ Newton Centre	81
“ “ “ “ “ Newton Highlands	19
“ “ “ “ “ Upper Falls	38

574

OFFENCES FOR WHICH ARRESTS WERE MADE.

Assault.	3
Assault and battery	41
Assault, felonious	5
Assault on officer	10
Bastardy	3
Breaking and entering	8
Common drunkard	1
Common railer and brawler	1
Contempt of court	1
Cruelty to animals	2
Default warrant	1
Disturbing the peace	53
Disturbing religious meeting	7
Dipsomania	1
Drunkenness	286
Embezzlement	1
Escaped prisoners	2
Evading car fare	2
Gaming on the Lord's Day	3
Insane	12
Larceny, simple	26
Larceny, felonious	7
Malicious mischief	5
Non-support of family	3
Perjury	1
Profanity	7
Robbery	1
Selling leased property	5
Stealing a ride	2

Stubborn children	11
Suspicion of larceny	4
Suspicious persons	3
Threatening bodily harm	2
Tramps	9
Trespass	1
Truancy	3
Vagrancy	2
Violation of city ordinances	16
Violation of the dog law	1
Violation of the liquor law	14
Violation of the railroad law	6
Violation of United-States revenue law	1
Violation of town by-law (Watertown)	1

 574

**FEMALES WERE ARRESTED FOR THE FOLLOWING
OFFENCES:—**

Assault and battery	4
Contempt of court	1
Common railer and brawler	1
Disturbing the peace	5
Disturbing religious meeting	4
Drunkenness	14
Insanity	4
Larceny, simple	5
Larceny, felonious	1
Profanity	2
Selling leased property	4
Threatening bodily harm	1

Violation of the liquor law	3
Violation of United-States revenue law	1

 50

NATIVITY OF PRISONERS.

United States	264
Ireland	223
Canada	39
England	27
Scotland	8
Germany	7
France	4
Italy	2

 574

LODGERS.

At Police Station No. 1	274
“ “ “ “ 2	64
“ “ “ “ 3	473
“ “ “ “ 4	139

 950

Females	6
Foreigners	518
Number of lodgers in 1884	1,502
“ “ “ “ 1885	1,438
“ “ “ “ 1886	1,199

NATIVITY OF LODGERS.

United States	432
Ireland	331
England	90
Canada	38

Scotland	20
Germany	20
Sweden	12
France	3
Arabia	2
Norway	1
Italy	1
	<hr/>
	950

REPORTS MADE BY PATROLMEN TO CITY MARSHAL.

Accidents	65
Buildings found open, and secured	20
Buildings erecting	222
Cases investigated	74
Defective streets	25
Defective sidewalks	16
Defective water-pipes	12
Disturbances suppressed	19
Fire alarms	43
Fires extinguished without alarm	13
Intoxicated persons helped home	12
Lost children restored	8
Sick and injured persons assisted	39
Stray teams put up	9

MISCELLANEOUS BUSINESS.

Amount of property reported stolen in the city .	\$2,316 80
Amount of property recovered	2,056 55
Witness fees earned by officers, paid by clerk of court to the city treasurer	1,119 81
Amount of fines imposed by court	2,441 00

Imprisonment imposed by court	23 years.
Extra duties done by officers	232
Number of search warrants, for liquor, served	18
Number of liquor seizures	13
Gallons of liquor seized	102

All liquor condemned by court is turned over to the chief of the State Detective Force, in accordance with Sect. 38, Chap. 100 of the Public Statutes.

In addition to the other work performed by the Department, the officers have served and posted thirteen thousand tax-bills, water-tax bills, and other notices for the city departments.

The City Marshal has posted and served one hundred and eighty-six legal notices.

The following cases were reported to the medical examiner:—

Jan. 20.— William E. Davenport, suicide, — pistol.

Feb. 5.— Rose Green, heart disease.

April 26.— Charles C. Pottle, suicide, — razor.

May 5.— James Lynch, killed on Fitchburg Railroad at Bemis.

June 14.— Catherine Bright, chronic alcoholism.

June 15.— Walter C. McFarland, drowned in Charles River.

July 16.— Willie Whittemore, accidentally shot with rifle.

Aug. 5.— Richard A. Howes, heart disease.

Oct. 20.— Peter McCluskey, killed on Boston and Albany Railroad at Newtonville.

Oct. 27.— Clarence B. Crawford, killed on Boston and Albany Railroad at Auburndale.

Nov. 9.— Ellen Branagan, heart disease.

- Nov. 12.* — Eugene Good, suicide by drowning in Crystal Lake.
- Nov. 24.* — William Hannon, killed on Boston and Albany Railroad at Washington-street Crossing, Ward 7.
- Nov. 24.* — Charles Hannon, killed on Boston and Albany Railroad at Washington-street Crossing, Ward 7.
- Nov. 24.* — Joseph Burke, killed on Boston and Albany Railroad at Washington-street Crossing, Ward 7.
- Dec. 24.* — Maria Burke, killed on Boston and Albany Railroad at Riverside.
- Dec. 26.* — Henry Bates, heart disease.

POLICE ORGANIZATION.

- Daniel M. Hammond, City Marshal.
- Charles F. Richardson, Captain, day duty at headquarters.
- Charles E. Davis, Sergeant, night duty at headquarters.
- James D. Henthorn, Patrolman, day duty at Newton.
- Charles O. Davis, Patrolman, day duty at Nonantum.
- Noah F. Bosworth, Patrolman, day duty at Newtonville.
- John Ryan, Patrolman, day duty at West Newton.
- Charles P. Huestis, Patrolman, day duty at Newton Centre.
- William C. Emerson, Patrolman, night duty at Newton.
- Charles T. Bartlett, Patrolman, night duty at Newton.
- George E. F. Baker, Patrolman, night duty at Newton.
- John W. Conroy, jun., Patrolman, night duty at Nonantum.
- John W. Quilty, Patrolman, night duty at Nonantum.
- Thomas C. Clay, Patrolman, night duty at Newtonville.
- Edson C. Holmes, Patrolman, night duty at West Newton.
- Aurelius F. A. G. Libby, Patrolman, night duty at West Newton.
- William G. Bosworth, Patrolman, night duty at Auburndale.

Robert S. Harrison, Patrolman, night duty at Lower Falls.

Frank B. Fletcher, Patrolman, night duty at Newton Centre.

Ambrose M. Fuller, Patrolman, night duty at Newton Centre.

Rufus H. Moulton, Patrolman, night duty at Newton Highlands.

John Purcill, Patrolman, night duty at Upper Falls.

On account of sickness the officers have been absent two hundred and thirty-one days.

Special officers have been employed two hundred and seventy-six days, and paid six hundred and sixty-two dollars and seventy-four cents.

January 17, Charles F. Richardson was promoted from sergeant to captain; on the same day Charles E. Davis was promoted from patrolman to sergeant.

The additions to the force were John W. Quilty, appointed patrolman January 17, and Aurelius F. A. G. Libby, appointed patrolman January 24.

PROBATION WORK.

As probation officer, I have taken seven persons on probation, five from the Superior Court, and two from the Newton police court. All have done well, with the exception of one boy whom I took on probation from the police court. He was sent to the State Primary School at Palmer, during his minority, for larceny.

STREET LAMP LIGHTING.

At this date there are seventy-one (71) electric, seven hundred and fifteen (715) gas, and five hundred and seven (507) oil, lamps used for street lighting, a total of twelve hundred and ninety-three (1,293).

The gas and oil were lighted two hundred and fifty-four (254) nights, eighteen (18) of which were extra nights, or in addition to the regular lighting nights.

The electric lamps were lighted for the first time on the night of June 6, and were lighted one hundred and forty-four times, of which three were extra nights.

During the year 1886, the street lamps were lighted twenty-two extra nights, making forty extra lighting nights in two years. There are about one hundred and ten miles of accepted streets in the city, and about the same of private ways.

The regular lightning of the street lamps for the year 1888, if lighted by the moon schedule, will be as follows, both dates included, —

First lighting, Dec. 31, 1887, to Jan. 19, 1888.

Second lighting, Jan. 30 to Feb. 18.

Third lighting, Feb. 28 to March 18.

Fourth lighting, March 28 to April 16.

Fifth lighting, April 27 to May 16.

Sixth lighting, May 27 to June 15.

Seventh lighting, June 25 to July 14.

Eighth lighting, July 26 to Aug. 14.

Ninth lighting, Aug. 24 to Sept. 12.

Tenth lighting, Sept. 23 to Oct. 12.

Eleventh lighting, Oct. 22 to Nov. 10.

Twelfth lighting, Nov. 20 to Dec. 9.

Thirteenth lighting, Dec. 20 to Jan. 8, 1889.

Appropriation for police department for 1887	.	\$23,350	00
Amount expended	. . . . .	23,344	85
Balance	. . . . .		\$5 15

Amount expended	\$23,344 85
Fees paid by clerk of court to city treasurer . .	1,119 81
Total expenses for the department	<u>\$22,225 04</u>

STATION HOUSES.

Station No. 1 needs a water-closet in one cell, and a change made in the bunks of all the cells.

Station No. 2 has no water-closets in any of its cells. I would recommend, for the purpose of insuring health and cleanliness, that a water-closet be put in each cell.

Stations Nos. 3 and 4 are in good condition.

The furniture in all the stations will need repairing during the coming year.

A table showing the gradual growth of the Police Department, and the increase in its business during the past ten years.

Year.	Officers on Force.	Number of Arrests.	Amount expended for Police Department.	Amount paid for Special Officers.	Court Fees earned.	Balance unex- pended.
1878 .	15	339	\$14,954 34	\$454 25	\$680 55	\$545 66
1879 .	15	334	15,551 89	471 25	600 00	*51 89
1880 .	16	346	16,777 94	680 75	650 00	222 06
1881 .	16	402	16,930 96	471 25	808 00	69 04
1882 .	16	410	17,558 39	915 00	957 62	*58 38
1883 .	16	408	17,199 57	636 25	780 32	500 43
1884 .	16	462	17,752 52	1,279 35	820 50	72 48
1885 .	18	485	19,498 17	773 81	702 62	1 83
1886 .	20	528	21,591 46	905 04	674 16	2 54
1887 .	22	574	23,344 85	662 74	1,119 81	5 15

* Overdrawn.

For the better protection of the offices in City Hall at night, I would recommend a passage-way from the City Marshal's office to the hall in the basement of City Hall.

In conclusion, I wish to thank his Honor the Mayor and the Honorable Committee on Police for their assistance during the year.

Respectfully submitted,

DANIEL M. HAMMOND,

City Marshal.





City of Newton.

ANNUAL REPORT
OF THE
CHIEF OF FIRE DEPARTMENT

OF THE
CITY OF NEWTON
FOR THE YEAR ENDING DEC. 31, 1887,

WITH
A STATEMENT OF THE FIRES AND ALARMS, ALSO
LOSSES AND INSURANCE, DURING
THE YEAR.



RAND AVERY COMPANY, PRINTERS.
BOSTON.
1888.



REPORT OF THE CHIEF OF FIRE DEPARTMENT.

FIRE DEPARTMENT HEADQUARTERS.

OFFICE CHIEF OF DEPARTMENT, CITY HALL, December 31, 1887.

TO THE HONORABLE THE MAYOR AND CITY COUNCIL OF THE CITY
OF NEWTON.

Gentlemen, — I have the honor herewith to submit to you the Annual Report of the Fire Department for the year ending December 31, 1887; the same being my ninth, and the thirteenth of the present organization.

During the year forty-one buildings were damaged by fire, as follows : —

Totally destroyed	.	.	.	.	.	.	7
Partially damaged	.	.	.	.	.	.	11
Slightly damaged	.	.	.	.	.	.	23

The largest fire and loss of the year was occasioned by the destruction of the Eliot Congregational Church, at Centre and Church Streets, Jan. 16. The first call sent out was from Station 16, opposite the church, at 8.22 A.M., by a citizen who discovered the fire, and a second was immediately sent in, with commendable promptness, by Officer Henthorn at 8.25 A.M. Later on, reserve companies 6 and 7 were called. Efficient service was also rendered by Chief York, in charge of No. 1 engine, of the Watertown department.

The building was one of the largest wooden structures in the city, surmounted with a spire two hundred and fourteen feet high, and well on fire when first discovered. The efforts of the Department were directed to holding the fire within the original limits, and were successful, no damage resulting to surrounding property. The approximate loss upon building and contents amounted to \$53,000.

No loss equal to the above has occurred within the city limits since the burning of Eliot and Cole blocks, October, 1873, and January, 1874.

The manual force remains the same as in 1886, except that two permanent drivers have been added, and placed at Stations 1 and 2, very materially strengthening the force at those points. I fail to understand why the increase of the permanent force should be opposed. Five hundred new buildings have been added to the fire risks during the past three years, and the Department still depends upon call drivers for many of the reels. In case of fire, complaints are made because of the delay of apparatus, the drivers of which, not being permanently employed, may be engaged at their regular occupations, a mile from the station.

Extraordinary good fortune, and efficient service on the part of the force upon the ground, is all that has kept our losses within bounds. Neither are the Chief or Assistant Chief infallible, and their promptness in arriving at fires will not extinguish them if the nearest apparatus remains in its station because no driver is provided. Under the present arrangement satisfactory service cannot be guaranteed in Wards 4, 5, and 6.

The manual force is classed as follows : —

OFFICERS AND EMPLOYEES.

Chief of department and superintendent fire alarm	1
Assistant chief of department in charge of fire alarm	1
Engineers of engines	2
Engineer in charge of chemical and reserve steam fire engines	1
Drivers	7

CALL FORCE.

Foremen of companies	8
Assistant companies	8
Firemen of engines	2
Hosemen detailed as drivers of reels	4
Hosemen detailed as drivers of coal tenders	3
Truckmen	10
Hosemen	25
Grand total	72

APPARATUS IN SERVICE.

Steam fire engines	2
Hose reels	7
No. 4 champion chemical engine (100 gallons)	1
Truck	1
Coal tender	3

APPARATUS IN RESERVE.

Steam fire engine (complete)	1
Hose reel (ordinary repair)	1
Hose sleighs	6
Exercise wagon, No. 7 hose	1

IN CHARGE CHIEF AND ASSISTANT CHIEF.

Buggies	2
Cutters	2

The apparatus in service is in good repair, and no large outlay will be necessary during 1888.

The chemical engine has maintained its record as a wonderfully effective piece of fire apparatus.

Fires extinguished unaided	12
Effective service rendered at	13
Hose used	3,300 ft.
Ladders used	107 ft.
Gallons used	1,035
Miles travelled	149
Duration of service	53 hours.

Seven stations—five of brick and two of wood—are owned and occupied by this Department, all of which are in good repair, except that new floors are necessary at Stations 1, 2, 3, 5, and 1 truck. The bell-tower at No. 2 station is unsafe, and the drainage at this station requires immediate attention.

The general condition of the Department horses has been excellent, and reflects credit upon the drivers and the Department veterinarian, whose report is herewith annexed. The recommendations contained therein I cheerfully indorse, as follows:—

New horse for No. 3 reel, pair horses Chemical A, and possibly one for the Assistant Chief.

VALUE OF DEPARTMENT PROPERTY.

Buildings and land	\$86,000
Apparatus, horses, and furniture	30,000
Fire-alarm telegraph	24,000
<hr/>	
Total	\$140,000

HOSE.

Ninety-one hundred (9,100) feet of good hose is in service at the several stations. Five hundred feet of new hose will be sufficient for the present requirements. For quantity, quality, and where distributed, see Appendix.

HYDRANT SERVICE.

Reports from the water department show that sixty-six new hydrants have been erected upon new and old mains during the year, making a total of five hundred and thirty-seven. Additional hydrants are needed, as follows:—

Grove Street, between Woodland Avenue and Hancock Street	Ward 4
Maple Street and Berkeley Place	" 4
Grove and Auburn Streets	" 4
Lake Avenue and Beacon Streets	" 6

The city council have authorized the following expenditures:—

Five fire-alarm stations.

Three horses.

Fifteen hundred feet of hose.

One bell and striking apparatus.

Two permanent drivers.

UNIFORM.

Upon recommendation of the Joint Standing Committee and Chief of Department, the board of aldermen adopted a uniform "Bill of Dress" for the officers and employees of the permanent force, the same to take effect Sept. 1, 1887. A copy of the same is herewith submitted. See Appendix.

INCENDIARISM.

Through the efforts of the police department one incendiary was arrested, convicted, and sentenced by the courts to eight years in the State prison.

RECOMMENDATIONS.

That the rapid growth of that portion of Wards 1 and 2 known as Nonantum, necessitates the placing of a station and apparatus at or near Nevada and Watertown Streets; also in Ward 5, at the Highlands, near the junction of Lincoln and Bowdoin Streets. Additional ladder service is especially necessary in this locality.

That the alterations and maintenance of the several stations be placed under the direct control of the Joint Standing Committee on Fire Department.

APPROPRIATIONS AND EXPENDITURES.

The appropriation for the maintenance of the Fire Department for the year ending Dec. 31, 1887, was \$26,200, which has been expended as follows:—

Salaries (including 1 driver, 6 months)	. . . . .	\$16,332 03
Hay, grain, etc.	. . . . .	2,645 22
Hose . . . . .	. . . . .	1,185 90

Fire-alarm maintenance and repairs . . .	1,121 12
Five fire-alarm stations, and erecting same .	769 17
Purchase 3 horses	650 00
Coal and wood	520 96
Gas and water rates	397 93
Extra horses for winter use	348 38
Repairs apparatus	307 61
Shoeing horses	356 14
Salary veterinary and medicines	271 95
Laundry	177 95
Call driver No. 7 hose	213 00
Uniform die, buttons, and badges	94 50
Miscellaneous, as per books of auditor . .	1,669 91
Total	<hr/> \$27,061 77

ACKNOWLEDGMENTS.

In tendering my acknowledgments to his honor the mayor and the city council, to Alderman George Pettee, chairman, and Messrs. J. Edward Hollis, Ellis, W. Redpath, Andrew J. Fiske, and Heman M. Burr of the Joint Standing Committee on Fire Department, I desire to express my sincere appreciation for the hearty and earnest co-operation tendered me in my official position.

To Assistant Chief Walter B. Randlett, and the officers and members of the force, for that earnest support so necessary to the success of our united efforts, and to the several heads of departments and their assistants, for the courtesies tendered.

With the tendering of this report to your honorable board, completes, also, thirty years of service, as boy and man, in the Fire Department of this city.

During this term many changes and improvements have been noted.

Steam has superseded hand engines; fire-alarm telegraph, the old-time bell-ringing. A bountiful supply of water has permitted the connecting of "Cheescake Brook" with the Metropolitan Sewage System; and we have witnessed the growth of the country village to that of the "Garden City of New England."

Respectfully submitted,

HENRY L. BIXBY,
Chief of Department.

FIRE-ALARM DEPARTMENT.

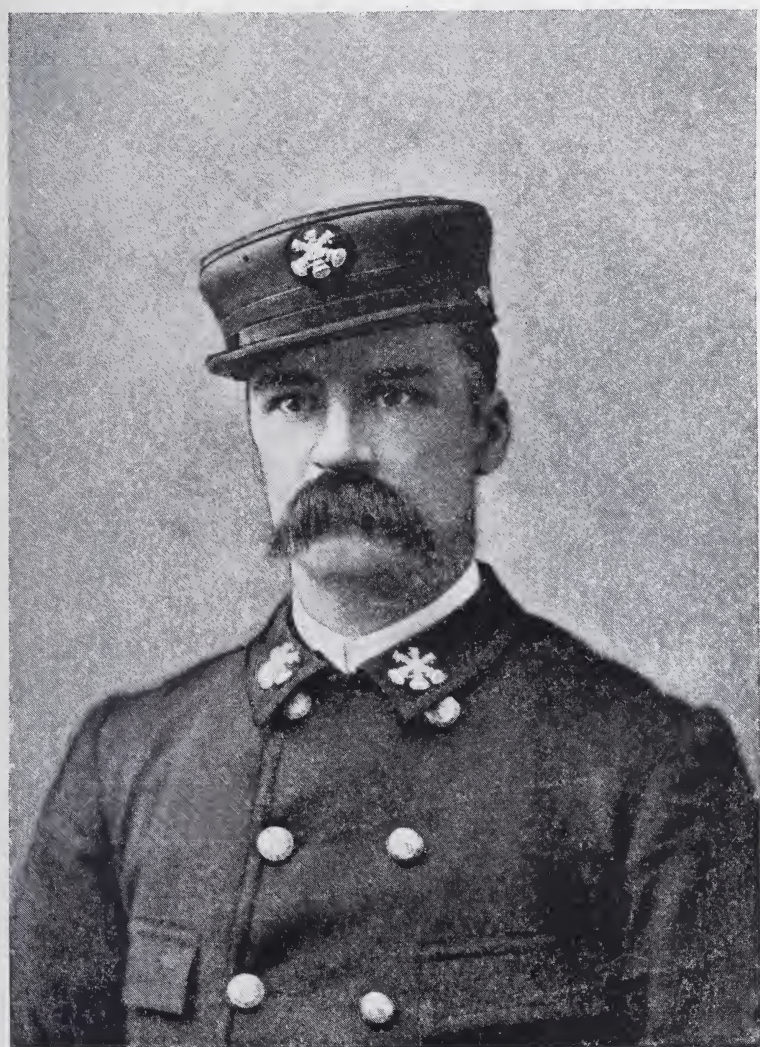
This branch of the service has been maintained in perfect order, under the personal care of the Assistant Chief. The duties and responsibilities have very largely increased, and will necessitate additional assistance at an early day.

A constant supervision is maintained over a hundred and twenty-two miles of overhead wires, divided as follows:—

4 fire-alarm circuits	. . . .	65 miles
6 tapper-line circuits	. . . .	26 "
1 fire department telephone circuit.	. . . .	16 "
1 police department telephone circuit	. . . .	10 "
1 water department telephone circuit	. . . .	5 "

Forty-nine first, second, and general alarms, together with nine hundred and sixty blows for special calls and signals, have been correctly sent out.

The constant and rapid growth of the city, necessitating





yearly additions to the system, requires the substituting of a larger repeater at an early day.

Electric light protectors, furnished by the Gamewell Company, have been placed in circuit at fire-alarm headquarters, and those of the National Protector Company of New York for tower bells and station gongs, to protect the instruments from injury from possible contact with electric light currents.

By order of the city council five additional signal-stations were purchased, and located as follows: —

114, Eldredge and Vernon Streets.

115, Elmwood and Centre Streets.

226, Washington Park.

72, Centre and Pelham Streets.

331, Margin Street and Boston and Albany Railway Station, making a total of fifty-six public and four private signal-stations.

Where practicable, I would recommend the introduction of the auxiliary system for public buildings and manufactories, as well as private residences.

I would also recommend the “keyless door” for such of the stations upon the principal streets as may be deemed necessary.

Additional signal-stations are required as follows: —

Washington and Channing Streets.

Centre and Ward Streets.

Homer and Cedar Streets.

Lincoln and Bowdoin Streets.

Temple and Putnam Streets.

Winthrop and Shaw Streets.

River and Lexington Streets.

Petitions have also been received for signal-stations at Chapel and Middle Streets; Lexington, between Walcott and River Streets; Webster Park; River and Derby Streets; Waverly Avenue and Kenilworth Street.

These should be erected at an early day.

One person was arrested and fined for interfering with the fire-alarm wires.

TELEPHONE DEPARTMENT.

This department has been maintained as perfectly as circumstances would allow; consisting, as it does, of thirty-one miles of overhead wires, in many places passing through thick foliage, with the many wires of other companies in close proximity, crosses, grounds, and breaks have been frequent. The service, especially the police, has not been satisfactory. The entire duty pertaining to the care of the fire alarm and special telephone circuits, devolves upon one man, and it has been utterly impossible to improve the service. Heavily insulated wire has been substituted where the most frequent troubles occurred, as a temporary expedient.

A separate circuit has been established connecting the water department at City Hall with the pipe yard and pumping station.

The following is a summary of labor performed upon the fire-alarm and telephone department lines by, and under the supervision of, the Assistant Chief of Department.

New poles (erected), cedar . . .	175
Old poles re-set . . .	20
Old poles taken down . . .	150
New overhead No. 9 iron wire strung .	3½ miles.

New overhead No. 12 iron wire strung .	1 mile.
New overhead No. 12 hard drawn copper,	$\frac{3}{4}$ mile.
Old wire removed	2 $\frac{1}{2}$ miles.
Signal stations moved	4
Signal stations painted and varnished .	56

NEW INSTRUMENTS PLACED IN CIRCUIT.

Tower bell	1
Striking apparatus for same	1
Gong, 8-inch	1
Signal stations (new)	6
Electric light protectors (Gamewell)	4
Electric light protectors, National Electric Protector Co.	16

HENRY L. BIXBY,

Superintendent.

WALTER B. RANDLETT,

Assistant Chief (in charge).

REPORT OF THE DEPARTMENT VETERINARIAN.

NEWTON, December 31, 1887.

HENRY L. BIXBY, *Chief of Fire Department.*

Sir, — I have at this time to make the usual report of all well, and in making my report to acknowledge the uniform courtesy which has been shown throughout the department to me while in the discharge of my duties, and which has aided the veterinarian in the work of the year.

The horses are at the present time in good health.

There have been through the year only two very severe

cases of disease, while the little troubles which always come have been easily met and cared for.

There has been one death among the horses during the year; viz., one of the pair belonging to Chemical A, from enteritis, or inflammation of the bowels, about two weeks ago. The three new horses bought the present year have done well up to the death of the chemical horse. The only change in the horses that I would recommend, would be the purchase of a new pair for the chemical, and perhaps it would be well to change the horse on Hose No. 3.

I have made during the year fifty-two (52) regular visits, and thirty (30) special visits.

The cases which have come up for treatment have been, —

Colic	.	.	.	.	.	.	.	.	3
Corns	.	.	.	.	.	.	.	.	1
Bruise sole	.	.	.	.	.	.	.	.	1
Enteritis	.	.	.	.	.	.	.	.	1
Quarter cracks	.	.	.	.	.	.	.	.	2
Shoeing	.	.	.	.	.	.	.	.	1

Respectfully submitted,

MADISON BUNKER,

Department Veterinarian.

BUILDING DEPARTMENT.

During the year ending Dec. 31, 1887, 183 new buildings have been erected, and additions and alterations made upon 52 others, making a total of 235.

Of the above buildings, those constructed of wood

numbered	229
Of brick	2
Of stone	2
Stone and wood	1
Brick and wood	1

and classed as follow : —

Dwellings	188
Stables	33
Stores and tenements	9
Churches	3
Ice houses	2

and located as follows : —

Ward 1	24
Ward 2	65
Ward 3	40
Ward 4	31
Ward 5	39
Ward 6	24
Ward 7	12

Approximate value of above buildings is estimated at \$950,000.

HENRY L. BIXBY,

Inspector.

TELEGRAPH, TELEPHONE, ELECTRIC LIGHT AND POWER CIRCUITS.

In accordance with the ordinance established by the city council, regarding a supervision of all telegraph, telephone, electric light, and power circuits by the Chief of Fire De-

partment, the following summary of said duty is herewith submitted:—

The lines occupied jointly by the city and the New England Telegraph and Telephone Company, have been rebuilt by the latter company from the Square on Walnut Street to the Highlands, in a thorough and substantial manner; also from Walnut, on Watertown Street, to Washington Street; Cherry Street, from Washington to River Street; and Church, from Eldredge Street to Waverly Avenue. The following lines owned by the above company should be rebuilt the coming year:—

Watertown Street, from Walnut east to Watertown line.

Jefferson Street, from Centre Street to Watertown line.

Washington Street, west from Highland Street, to Charles River, at Lower Falls.

Margin Street, from Highland to Chestnut to Hillside Avenue to Otis Streets.

Oak from Chestnut to Elliott and Chestnut Streets.

Walnut, from Lincoln to Boylston Streets, and the removal of wires now upon trees on Auburn Street, from Greenough to Grove Streets, to poles on Auburn Street.

ELECTRIC LIGHT AND POWER CIRCUITS.

The Newton Electric Light and Power Company have erected six hundred poles and thirty-three miles of overhead wires, under authority granted by the city council.

Connected with the above circuits, and at points designated by the committee on street lights, seventy-two arc lamps have been placed.

At the several railway stations and places of business two hundred and forty incandescent lamps are in use.

I would recommend a revision of the present ordinance governing electric-light work, to more clearly conform to the rules issued by the New England Insurance Exchange.

I would recommend that all "overhead" circuits now in use, constructed with wire known as "Underwriters' Wire," be removed as unsafe, and only such wire substituted as shall have received the indorsement of the Insurance Exchange.

**LIST OF SALARIES PAID TO OFFICERS, EMPLOYEES,
AND MEMBERS.**

Chief of department, per year, including team	\$1,500 00
Assistant chief of department, per year, including team	1,000 00

Employees.

Engineers of engines	\$950 00
Drivers (2 horses)	750 00
Drivers (1 horse)	600 00

Call Members.

Foremen companies (per year)	\$110 00
Assistant foremen companies (per year)	105 00
Hose and truck men (per year)	100 00
Firemen	100 00

JOINT STANDING COMMITTEE ON FIRE DEPARTMENT.

Alderman GEORGE PETTEE, <i>Chairman</i>	Ward 5
Alderman J. EDWARD HOLLIS	" 1
Councilman ELLIS W. REDPATH	" 2
Councilman ANDREW J. FISKE	" 3
Councilman HEMAN M. BURR	" 6

OFFICERS OF THE DEPARTMENT.

Henry L. Bixby, *Chief of Department*, Headquarters, City Hall.

Walter B. Randlett, *Assistant Chief of Department*, Headquarters,
Fire Alarm.

APPENDIX.

ROSTER OF COMPANIES.

No. 1 ENGINE.

STATION.—WASHINGTON, OPP. NONANTUM STREET.

FIRST-CLASS DOUBLE HUNNEMAN ENGINE.

Badge.	NAME.	RANK.	AGE.	RESIDENCE.	OCCUPATION.
9	C. W. H. Boulton . .	Foreman, at call,	34	Washington St. . .	Carpenter.
14	E. W. Lyons	Assistant, “	31	Centre & Wash. Sts.	Plumber.
3	J. McCammon	Hoseman, “	34	Richardson St. . .	Merchant.
6	J. F. Horrigan, 2d . .	Hoseman, “	27	Washington St. . .	Blacksmith.
11	W. Pingree	Hoseman, “	29	At Station	Carpenter.
8	A. Carley	Fireman, “	22	At Station	Painter.
15	P. C. Carroll	Hoseman, “	35	Washington St. . .	Coachman.
EMPLOYEES.					
2	F. E. Judkins. . . .	Engineer	41	At Station	Permanent.
12	J. Deary	Driver	30	At Stat. C. . . .	Permanent.
4	F. A. Liddell	Driver	29	At Station	Permanent.

Appointments.

FRANK A. LIDDELL April 1, 1887.
P. C. CARROLL Aug. 15, 1887.

Promotions.

FRANK A. LIDDELL, to Reel Driver June 1, 1887.
C. W. H. BOULTON, to Foreman Aug. 1, 1887.
E. W. LYONS, to Assistant Foreman Aug. 1, 1887.

Honorable Discharge.

F. D. GRAVES July 31, 1887

Discharged.

R. J. MORRISEY Dec. 15, 1887

Resigned.

H. C. LINDLEY March 15, 1887.

CHEMICAL A AND HOSE 2.

STATION.—WASHINGTON STREET, OPP. LINCOLN PARK.

Badge.	NAME.	RANK.	AGE.	RESIDENCE.	OCCUPATION.
21	G. H. Haynes . . .	Foreman, at call,	52	Webster Park . .	Carpenter.
23	F. H. Humphrey . .	Assistant, "	41	Webster St. . . .	Merchant.
26	J. Q. A. Hawkes . .	Hoseman, "	61	Webster St. . . .	Painter.
24	W. H. Nichols . . .	Hoseman, "	42	Waltham St. . . .	Carpenter.
20	J. Cummings . . .	Hoseman, "	25	Washington St. . .	Janitor.
23	P. E. Ellis	Hoseman, "	28	At Station	Carpenter.
19	G. K. Stacy	Hoseman, "	29	At Station	Carpenter.
22	C. M. Kebbe	Hoseman, "	33	Henshaw St. . . .	Carpenter.
EMPLOYEES.					
17	R. S. Cummings . .	Engineer	37	At Station	Permanent.
18	C. L. Berry	Driver	33	At Station	Permanent.
29	F. D. Lancaster . .	Driver	38	At Station	Permanent.

Promoted.

F. D. LANCASTER, from No. 4 Hose to Reel Driver . . April 1, 1887.

Resigned.

R. J. RILEY March 29, 1887.

No. 3 ENGINE.

STATION.—WILLOW STREET.

SECOND-CLASS DOUBLE AMOSKEAG ENGINE.

Badge.	NAME.	RANK.	AGE.	RESIDENCE.	OCCUPATION.
35	A. I. English	Foreman, at call,	39	Centre St	Carpenter.
41	S. F. Chadbourne . .	Assistant, "	37	Willow St	Carpenter.
42	C. B. Geary	Hoseman, "	39	Lynnan St.	Carpenter.
33	D. McDonald	Hoseman, "	37	Centre St.	Carpenter.
44	C. J. Polly	Hoseman, "	28	Lyman St.	Carpenter.
36	C. E. Thompson . . .	Hoseman, "	28	At Station	Carpenter.
46	J. McMahon	Hoseman, "	28	Station St.	Blacksmith.
37	W. B. Polly	Hoseman, "	26	At Station	Clerk.
43	C. A. Peck	Fireman, "	31	At Station	Painter.
EMPLOYEES.					
32	A. D. Colby	Engineer	54	At Station	Permanent.
43	J. E. Watson	Driver	32	At Station	Permanent.

Promoted.

J. E. WATSON, from No. 4 Hose to Engine Driver . . April 15, 1887.

Honorable Discharge.

A. C. JEWETT April 15, 1887.

No. 1 TRUCK.

STATION.—WASHINGTON AND WALKER STREETS.

Badge.	NAME.	RANK.	AGE.	RESIDENCE.	OCCUPATION.
62	W. S. Higgins . . .	Foreman, at call,	40	Brooks Ave. . . .	Carpenter.
60	F. B. Sisson . . .	Assistant, “	49	Washington St. . .	Carpenter.
66	J. H. Williams . . .	Truckman, “	51	Washington St. . .	Painter.
87	O. Dow	Truckman, “	43	Murray St.	Plumber.
68	T. C. Nickerson . . .	Truckman, “	41	Lowell St.	Carpenter.
63	H. J. Williams . . .	Truckman, “	24	At Station	Painter.
65	U. H. Dyer	Truckman, “	35	Lowell St.	Merchant.
64	J. Beals	Truckman, “	38	Washington St. . .	Merchant.
69	J. Watts	Truckman, “	31	Murray St.	Carpenter.
70	J. F. Horrigan . . .	Truckman, “	44	Washington St. . .	Painter.
61	C. Coleman	Truckman, “	41	Allston St.	Carpenter.
71	M. McLeod	Truckman, “	31	Allston St.	Carpenter.
EMPLOYEE.					
59	Charles Murphy . . .	Driver	30	At Station	Permanent.

No. 4 HOSE.

STATION.—WASHINGTON AND WALKER STREETS.

Badge.	NAME.	RANK.	AGE.	RESIDENCE.	OCCUPATION.
52	E. C. Waterhouse . . .	Foreman, at call,	32	Allston St.	Carpenter.
47	A. J. Wandless . . .	Assistant, “	42	Allston St.	Carpenter.
50	D. Archibald	Hoseman, “	31	At Station	Shoemaker.
49	John S. Williams . . .	Hoseman, “	25	Walnut St.	Painter.
48	J. W. Cook	Hoseman, “	28	Walnut St.	Painter.
EMPLOYEE.					
51	F. A. Dexter	Driver	29	At Station	Permanent.

Appointments.

JOHN S. WILLIAMS April 1, 1887.

J. WILLARD COOK April 15, 1887.

Promotion.

F. A. DEXTER, to Reel Driver April 15, 1887.

No. 5 HOSE.

STATION.—AUBURN, BETWEEN MELROSE AND WOODBINE STREETS.

Badge.	NAME.	RANK.	AGE.	RESIDENCE.	OCCUPATION.
55	J. F. Washburn . . .	Foreman, at call,	28	At Station	Painter.
58	J. U. Kimball	Assistant, “	40	At Station	Carpenter.
54	J. M. Taylor	Hoseman, “	29	Auburn St.	R.R. Empl'e.
57	J. Frost	Hoseman, “	50	Auburn St.	Shoemaker.
56	C. G. Fletcher	Hoseman, “	40	Central St.	Painter.
53	W. C. Spaulding . . .	Hoseman, “	24	At Station	Clerk.

No. 6 HOSE.

STATION.—WASHINGTON AND HAMILTON STREETS.

Badge.	NAME.	RANK.	AGE.	RESIDENCE.	OCCUPATION.
75	Bernard Early . . .	Foreman, at call.	31	Wash. & Wales Sts.	Papermaker.
76	D. J. Corcoran . . .	Assistant, "	26	At Station . . .	Carder.
77	W. H. Ayles, jun. . .	Hoseman, "	20	At Station . . .	Papermaker.
79	P. E. O'Neil . . .	Hoseman, "	31	At Station . . .	Fireman.
78	D. J. Cooney . . .	Hoseman, "	26	At Station . . .	Carpenter.
74	T. E. Healy . . .	Hoseman, "	27	Wash. & Wales Sts.	Painter.

Promoted.

D. J. CORCORAN, to Assistant Foreman July 1, 1887.

Appointment.

W. H. AYLES, Jun., Hoseman July 1, 1887.

Honorable Discharge.

H. H. MILES, Assistant Foreman July 1, 1887.

No. 7 HOSE.

STATION.—PETTEE STREET.

Badge.	NAME.	RANK.	AGE.	RESIDENCE.	OCCUPATION.
82	W. S. Cargill . . .	Foreman, at call,	40	High St.	Carpenter.
84	H. A. Smith . . .	Assistant, "	33	Rockland Place . .	Carpenter.
81	J. E. Trowbridge . .	Hoseman, "	51	High St.	Merchant.
80	J. T. Thomason . .	Hoseman, "	39	Chestnut St. . . .	Merchant.
83	G. H. Osborn . . .	Hoseman, "	39	Summer & High Sts.	Moulder.
86	E. A. Mansfield . .	Hoseman, "	26	At Station	Machinist.

Appointment.

E. A. MANSFIELD, Hoseman Jan. 1, 1887.

STATEMENT OF DUTY PERFORMED BY EACH COMPANY.

COMPANY.	LADDERS.	HOSE.	MILES.	DURATION OF SERVICE.
Engine One . . . . .	..	2,050 ft.	82	30 hours, 10 minutes.
Engine Three . . . . .	..	4,800 "	68	35 " 10 "
Chemical A.	107 ft.	3,300 "	149	53 " ..
Hose Two . . . . .	..	4,400 "	67	28 " 25 "
Hose Four . . . . .	..	4,200 "	62	26 " 55 "
Hose Five . . . . .	..	1,500 "	85	17 " 45 "
Hose Six . . . . .	..	2,300 "	51	25 " 55 "
Hose Seven . . . . .	..	2,850 "	36	21 " ..
Truck One	561 "	..	125	55 " ..
Total	668 ft.	27,400 ft.	674	293 hours, 20 minutes.

STATEMENT OF HOSE, QUANTITY, QUALITY, AND WHERE DISTRIBUTED

COMPANY.	COTTON.	RUBBER.	LEATHER.	QUALITY.
Engine One	1,500 feet.	..	..	Good.
Engine Three	1,500 "	..	..	Good.
Chemical A . . . . .	..	300 feet.	..	Good.
Hose Two	1,500 "	..	..	Good.
Hose Four	1,500 "	..	..	Good.
Hose Five . . . . .	..	750 "	..	New.
Hose Six . . . . .	..	750 "	..	New.
Hose Seven	1,200 "	..	..	Fair.
On hand	100 "	..	1,500 feet.	Condemned.
Total	7,300 feet.	1,800 feet.	1,500 feet.	..

FIRE-ALARM DEPARTMENT.

CITY BUILDING, WILLOW STREET.

WALTER B. RANDETT, Operator.

LOCATION OF TOWER BELLS.

BUILDING.	STREET.	WEIGHT.
Armory	Washington St.	2,240 lbs.
Methodist Church	Walnut St.	1,200 "
City Hall	Washington St.	2,650 "
Congregational Church	Hancock St.	3,250 "
Methodist Church	Summer St.	1,500 "
Congregational Church	Hartford and Lincoln Sts.	1,500 "
Mason School	Centre St.	2,000 "
No. 6 Hose Station	Washington and Hamilton Sts.	727 "

LOCATION AND SIZE OF GONGS.

No. 1 Engine Station	15-inch.
No. 2 " "	15 "
No. 3 " "	15 "
No. 1 truck "	16 "
No. 4 Hose "	16 "
No. 5 " "	8 "
No. 6 " "	15 "
No. 7 " "	16 "
Residence of Chief of Department	8 "
Residence of Assistant Chief	8 "
Residence of Otis Pettee (private)	8 "
Works of M. G. Crane (private)	16 "
Pumping station	8 "
Residence city marshal	8 "
Fire-alarm headquarters (time gong)	8 "

LOCATION OF SIGNAL STATIONS.

12. Park and Church Streets, Newton.
13. Sargent and Centre Streets, Newton.
14. Washington and Jewett Streets, Newton.
15. No. 1 Engine Station, Newton.
16. Church and Centre Streets, Newton.
17. School and Pearl Streets, Newton.
18. Newtonville Avenue and Howard Street, Newton.
112. Washington Street and Waverly Avenue, Newton.
113. Waverly Avenue and Vernon Street, Newton.
114. Eldredge and Vernon Streets, Newton.
115. Centre and Elmwood Streets, Newton.
21. No. 1 Truck Station, Newtonville.
23. Washington and Walnut Streets, Newtonville.
24. Chapel and Watertown Streets, Nonantum.
25. Lowell and Watertown Streets, Newtonville.
26. Walnut Street, opp. High School, Newtonville.
27. Highland Avenue and Allston Street, Newtonville.
28. Walnut and California Streets, Newtonville.
212. Watertown and Parsons Streets, Newtonville.
224. Nonantum Worsted Mills, Nonantum. (P.)
226. Washington Park, Newtonville.
31. Waltham and Washington Streets, West Newton.
32. River and Pine Streets, West Newton.
34. Waltham and Derby Streets, West Newton.
35. No. 2 Engine Station, West Newton.
36. Fuller and Washington Streets, West Newton.
37. Hillside Avenue and Otis Street, West Newton.
312. Police Headquarters, City Hall, West Newton.
331. Margin Street and B. & A. Railway Station, West Newton.
4. Auburn and Lexington Streets, Auburndale.
41. Auburn and Charles Streets, Riverside.
42. Woodland Avenue and Grove Street, Auburndale.
43. Ash and Islington Streets, Auburndale.
45. Auburn and Greenough Streets, Auburndale.

421. Hancock and Fern Streets, Auburndale.
5. No. 6 Hose Station, Lower Falls.
51. Washington and Concord Streets, Lower Falls.
52. City Farm.
53. Grove Street and Pine Grove Avenue, Lower Falls.
54. Entrance Cottage Hospital, Woodland.
512. Paper Mills, C. F. Crehore & Son, Lower Falls. (P.)
6. No. 7 Hose Station, Upper Falls.
61. Chestnut and Winter Streets, Upper Falls.
62. Chestnut and Oak Streets, Upper Falls.
63. Mechanic and Elliott Streets, Upper Falls.
64. Walnut Street, rear B. & A. Railway Station, Highlands.
65. Cook and Boylston Streets, Highlands.
612. Office Pettee Machine Works, Upper Falls. (P.)
641. Gamewell Fire Alarm Works, Highlands. (P.)
7. Station Street and Glen Avenue, Newton Centre.
71. Walnut Street and Cemetery Gate.
72. Centre and Pelham Streets, Newton Centre.
73. No. 3 Engine Station, Newton Centre.
74. Beacon Street and Laurel Avenue, Newton Centre.
75. Cypress and Paul Streets, Newton Centre.
8. Beacon and Hammond Streets, Chestnut Hill.
81. Ward Street and Waverly Avenue, Newton Centre.
82. Kenrick Street and Waverly Avenue, Newton.
9. Brookline and Dedham Streets, Oak Hill.
91. Clark and Parker Streets, Oak Hill.

DEPARTMENT SIGNALS.

Repetition of first,	Second alarm.
3 blows,	General alarm.
10 blows, followed by station number,	Second and general combined.
2 " " " " "	All out.
2-2 " " " " "	No. 1 Engine out of city.
3 " " " " "	No. 2 " " " "
3-3 " " " " "	No. 3 " " " "

SPECIAL CALLS.

1-2-1, followed by station number,				No. 1 Engine.
1-2-2,	"	"	"	No. 2 Engine.
1-2-3,	"	"	"	No. 3 Engine.
1-3-3,	"	"	"	Chemical A.
1-2,	"	"	"	No. 1 Truck.
4,	"	"	"	No. 4 Hose.
5,	"	"	"	No. 5 Hose.
6,	"	"	"	No. 6 Hose.
7,	"	"	"	No. 7 Hose.

PRIVATE SIGNALS.

1 blow at 11 45 A.M. and 5.45 P.M. (Sundays 12.15 P.M.), Test signal.
 14 blows, followed by station number, Police signal.
 3-3-3 at 8.15 A.M. and 12.45 P.M., No school signal.

STATEMENT OF DETAILS OF FIRES AND ALARMS FOR THE YEAR ENDING DECEMBER 31, 1887.

Jan. 10.—Station 73. 6.15 P.M. Centre and Beacon Streets. Three-story frame, 30×50. Stores and tenements. Owned by D. S. Farnham, occupied by Frank Heal. Loss on contents, \$25. No damage to building. Cause, smoking in bed. Apparatus present: Engine 3; Chemical A; Hose 7; Truck 1. Chief and Assistant Chief.

Jan. 16.—Station 16. 8.22 A.M.; second, 8.25 A.M.; general, 8.55 A.M. Centre and Church Streets. Two-story frame, 50×125. Church. Owned and occupied by the Eliot Congregational Society. Loss, \$53,750. Insured. Cause, disconnected smoke flue. Apparatus present: Engines 1 and 3; Chemical A; Hose 2, 4, 5, 6, 7; and Truck 1. Also Engine 1 from Watertown. Chief and Assistant Chief.

Jan. 26.—Station 73. 6.31 P.M. Station and Beacon Streets. Three-story brick, 50×100. Stores and tenements. Owned by Thomas Nickerson, occupied by W. A. Knapp, Seaman, and others. Loss, \$1,263.08. Insured. Cause, defective chimney. Apparatus present: Engines 3 and A; Hose 7; Truck 1. Chief and Assistant Chief.

Feb. 12.—Station 5. 12.25 A.M. Pine Grove Avenue. Two-story frame, 14×28. Storehouse and stable. Owned by George Crehore heirs, occupied by James Moore. Loss,

\$354. Insured. Cause, supposed ignition cotton-waste. Apparatus present: Engines 3 and A; Hose 2, 5, and 6; Truck 1. Chief and Assistant Chief.

Feb. 16.—Station 32. 11.44 P.M. River Street. Two-story frame, 18×20. Dwelling. Owned and occupied by John Calaher. Loss, \$30. Insured. Cause, careless smoker. Apparatus present: Engines 1 and A; Hose 2, 4, 5; Truck 1. Chief and Assistant Chief.

Feb. 20.—Station 212. 9.49 A.M. Parsons and Washington Streets. Two and a half story frame, 36×40. Dwelling. Owned by C. F. Eddy. Cause, drying plastering. Alarm unnecessary. Apparatus present: Engines 1 and A; Hose 2 and 4; Truck 1. Chief and Assistant Chief.

March 4.—Station 16. 12.37 P.M. Church and Centre Streets. Ordered by the mayor. Apparatus present: Engines 1 and A; Hose 4; Truck 1. Chief and Assistant Chief.

March 24.—Telephone call. 8.20 P.M. Grass-land, Woodward Street. Extinguished by Assistant Chief. Cause, locomotive sparks.

April 1.—False alarm. 9.15 P.M. Caused by unknown parties tampering with wires on Needham Street.

April 3.—Station 4. 1.44 P.M. Auburn and Grove Streets. Two-story frame, 20×25. Owned by R. M. Pulisifer and occupied by Robert Gardner. Slight damage. Insured. Cause, locomotive sparks. Apparatus present: Engines 1 and A; Hose 2, 4, 5, and 6; Truck 1. Chief and Assistant Chief.

April 4.—Station 65. 12.37 A.M. Woodward Street.

Four, one-story frames. Glue manufactory. Owned and occupied by F. N. Woodward. Loss, \$2,500. Insured. Cause, incendiary. Apparatus present: Engines 3 and A; Hose 7; Truck 1. Chief and Assistant Chief.

April 5. — 3 P.M. Washington, between Highland and Chestnut Streets. Grass and fences. Extinguished by Engineer Cummings of Chemical A. Cause, set by children.

April 10. — Telephone call. Woodland Avenue. Grass and fences. Apparatus present: 5 Hose. Chief of Department.

April 14. — Station 61. 7.59 A.M. Chestnut and Ellis Streets. Three-story frame, 25×50. Stores and tenements. Owned and occupied by H. W. Fanning. Damage slight. Insured. Cause, sparks from chimney. Apparatus present: Engines 3 and A; Hose 7; Truck 1. Chief and Assistant Chief.

April 14. — Telephone. 12.45 P.M. Grass-land, Chestnut Street. Cause unknown. Extinguished by 2 Hose.

April 14. — Still. 3.30 P.M. Grass-land. Washington and Greenough Streets. Cause, set by children. Extinguished by Chemical A.

April 16. — Station 73. 10.10 P.M. Willow and Centre Streets. Three-story frame, 30×40. Baptist Orphans' Home. Loss slight. Insured. Cause, spontaneous combustion of rags soaked in furniture polish. Apparatus present: Engines 3 and A; Hose 7; Truck 1. Chief and Assistant Chief.

April 18. — Washington Street and Jackson Place. 10.45 A.M. Grass-land. Cause, set by children. Extinguished by No. 6 Hose.

April 20.—Oakland Avenue. 3.10 P.M. Grass-land. Cause, locomotive sparks. Extinguished by No. 5 Hose.

April 23.—Centre and Church Streets. 7.35 P.M. Burning rubbish. Extinguished by No. 1 Hose.

April 25.—Station 45. 8 P.M. Crescent Avenue. Cause, grass-land ignited from locomotive sparks. Apparatus present: Engines 1 and A; Hose 2, 4, 5, and 6; Truck 1. Chief and Assistant Chief.

May 1.—Station 53. 3.55 P.M. Grove Street. Grass-land. Cause, set by children. Apparatus present: Engines 1 and A; Hose 2, 5, and 6; Truck 1. Chief and Assistant Chief.

May 4.—Telephone. 2.30 P.M. Crescent Avenue. Grass-land. Cause, locomotive sparks. Extinguished by Chief of Department.

May 4.—Beacon Street. 6.45 P.M. Wood-land. Cause, locomotive sparks. Extinguished by Hose 3 and Assistant Chief.

May 10.—Still. 11 P.M. Elgin Street. Wood-land. Cause, locomotive sparks. Extinguished by 3 Hose and Assistant Chief.

May 11.—Station 35. 8.40 P.M. Lander Street. Two and a half story frame, 30×40. Dwelling. Owned by Mrs. C. E. Hosmer. Unoccupied. Loss, \$100. Insured. Cause, incendiary. Apparatus present: Engines 1 and A; Hose 2, 4, 5, 6; Truck 1. Chief and Assistant Chief.

May 13.—Station 35. 8.58 P.M. Prospect Street. One

and a half story frame, 12×12 . Stable. Owned by Mrs. C. M. Van Duzee. Loss, \$190. Cause, incendiary. Apparatus present: Engines 1 and A; Hose 2, 4, 5, and 6; Truck 1. Chief and Assistant Chief.

May 14.—Special call 3-3. 12.40 A.M. Assistance asked from Needham. Engine 3, in charge Assistant Chief, detailed.

May 16.—Telephone. 5.38 P.M. Walnut and Duncklee Streets. Brush fire. Extinguished by 3 Hose and Assistant Chief.

May 17.—Station 17. 4.45 P.M. Pearl and Thornton Streets. One-story frame shed, 10×10 . Owned by Thomas Green. Cause, children playing with matches. Damage slight. Apparatus present: Engines 1 and A; Hose 4; Truck 1. Chief and Assistant Chief.

May 17.—Station 31. 12.51 P.M. Washington Street. One and a half story frame, 20×20 . Shed. Owned by Alvin Houghton. Loss, \$15. Cause, children playing with matches. Apparatus present: Engines 1 and A; Hose 2, 4, 5; Truck 1. Chief and Assistant Chief.

May 20.—Station 26. 10.39 A.M. Brush. Cause, careless burning of rubbish. Apparatus present: Engines 1 and A; Hose 2, 4; Truck 1. Chief and Assistant Chief.

May 20.—Station 26. 12.45 P.M. Rekindling of above fire. Alarm unnecessary. Apparatus present: Engines 1 and A; Hose 2, 4; Truck 1. Chief and Assistant Chief.

May 22.—Telephone. 3.50 P.M. Concord Street. Woodland. Extinguished by 6 Hose and Chemical A.

June 1. — Station 5. 12.44 P.M. Washington and Hamilton Streets. One-story stone, 30×150 . Shoddy mill. W. S. and F. Cordingly. Loss not ascertained. Cause, sparks from picker-machine. Apparatus present: Engines 3 and A; Hose 2, 5, 6; Truck 1. Chief and Assistant Chief.

June 13. — Station 73. 2.27 P.M. Bowen Street. Two and a half story frame, 25×40 . Dwelling. Owned and occupied by G. W. Ulmer. Loss, \$40. Insured. Cause, wooden air-shaft entering chimney. Apparatus present: Engines 3 and A; Hose 7; Truck 1. Chief.

June 14. — Station 64. 1.28 A.M. Cause, unnecessary alarm given by police for fire in Woburn.

June 27. — Station 25. 11.30 P.M. Crafts Street. Burning of refuse wood. Cause, malicious mischief. Apparatus present: Engines 1 and A; Hose 2, 4; Truck 1. Chief and Assistant Chief.

July 2. — Station 31. 1.36 P.M. Waltham and Washington Streets. One-story frame, 20×30 . Blacksmith shop. Occupied by Patrick Keegan. Damage slight. Cause, sparks from chimney. Apparatus present: Engines 1 and A; Hose 2, 4, 5; Truck 1. Chief of Department.

July 4. — Station 23. 12.33 A.M. Central Avenue. One-story frame, 10×12 . Owned by E. Smead. Damage slight. Cause, fire-crackers.

July 4. — Station 23. 1 A.M. Washington Street. One-story frame, 15×30 . Wheelright shop. Occupied by B. F. Barlow. Damage slight. Cause, incendiary.

July 4. — Still. 2 A.M. Cedar and Homer Streets. Cause, burning of hedges. Malicious mischief. Extinguished by No. 3 Hose and Assistant Chief.

July 4. — Station 226. 2.48 A.M. Walnut Street. One-story frame, 10×12. Rifle range. Owned by Claflin Guard. Loss, \$75. Cause, incendiary.

July 4. — Station 5. 9.48 A.M. Washington and Hamilton Streets. Two and a half story tenement block, 30×50. Owned by John Dolan. Occupied, M. Maloney. Damage, slight. Cause, burning meat and wood.

July 4. — Station 24. 12.26 P.M. Adams and Watertown Streets. Two and a half story frame, 20×25. Dwelling. Owned by Timothy Kinsella. Loss, \$150. Insured. Cause, fire-crackers.

July 4. — Pettee Street. 5 P.M. Brushfire. Extinguished by Hoseman Mansfield, No. 7 Hose.

July 4. — 9 P.M. Grove Street. Grass-land. Extinguished by Capt. Early, No. 6 Hose.

July 6. — Still. 5.30 A.M. Church and Centre Streets. Rubbish pile. Set by boys. Extinguished by No. 1 Hose.

July 6. — Still. 2.30 P.M. Mechanic Street. One-story frame, 15×30. Dwelling. Owned by Pettee Machine Works. Damage, slight. Cause, fire-crackers. Extinguished by Capt. Cargill, No. 7 Hose.

Aug. 12. — Station 226. 11.54 A.M. Clarendon Street. Stack of hay. Loss, \$80. Owned by Miles Tenny. Cause,

children playing with matches. Apparatus present : Engines 1 and A ; Hose 2, 4 ; Truck 1. Chief and Assistant Chief.

Aug. 29. — Station 4. 2.19 A.M. Auburn and Grove Streets. Two and a half story frame, 28×40. Dwelling. Owned by Mrs. J. W. Parker. Loss, \$2,000. Insured. Cause, incendiary. Apparatus present : Engines 1 and A ; Hose 2, 4, 5, 6 ; Truck 1. Chief and Assistant Chief.

Oct. 14. — Station 24. 7.31 P.M. Chapel and Middle Streets. Two-story frame, 20×30. Dwelling. Owned by John Hennessy. Occupied by Bridget and John Leonard. Loss, \$450. Insured. Cause, broken lamp. Apparatus present : Engines 1 and A ; Hose 2 and 4 ; Truck 1. Chief and Assistant Chief.

Oct. 16. — Telephone. 10 A.M. Centre and Walnut Streets. Compost. Cause, spontaneous combustion. Extinguished by No. 3 Hose. Chief and Assistant Chief.

Oct. 16. — Station 9. 12 M. Dedham Street. Wood-land, 10 acres. Owned by A. Wiswall. Cause, sparks from adjoining brush fire. Apparatus present : Engines 3 and A ; Hose 7. Chief and Assistant Chief.

Oct. 24. — Still. 12 M. Pine Grove Avenue. Wood-land. Cause, locomotive sparks. Extinguished by No. 6 Hose.

Oct. 24. — Station 35. 12.55 P.M. Lucas Court. Two-story frame, 20×30. Dwelling. Owned by Seth Davis. Loss, \$15. No insurance. Cause, sparks from mill chimney. Apparatus present : Engines 1 and A ; Hose 2, 4, 5, 6 ; Truck 1. Chief and Assistant Chief.

Oct. 25. — Station 115. Centre and Washington Streets. Three-story frame, 40×50. Stores and offices. Owned by A. Howes. Damage, slight. Cause, ignition of rubbish in basement from unknown causes. Apparatus present: Engines 1 and A; Hose 4; Truck 1. Chief and Assistant Chief.

Oct. 25. — Station 35. 7.46 P.M. Webster Park. One-story frame, 20×40. Freight house. Owned by Boston & Albany Railway. Loss, \$25. Insured. Cause, incendiary. Apparatus present: Engines 1 and A; Hose 2, 4, 5, and 6; Truck 1. Chief and Assistant Chief.

Oct. 29. — Still. 7 P.M. Walnut and Mill Streets. Burning brush. Cause, malicious mischief. Extinguished by No. 4 Hose.

Oct. 29. — Still. 8.30 P.M. Mill and Cedar Streets. Brush. Cause, malicious mischief. Extinguished by No. 3 Hose and Assistant Chief.

Nov. 4. — Station 26. 12.45 P.M. Walnut and Mill Streets. Brush. Cause, malicious mischief. Apparatus present: Engines 1 and A; Hose 2, 4; Truck 1. Chief and Assistant Chief.

Nov. 7. — Still. 7.30 P.M. Elgin Street. Swamp-land, 30 acres. Cause, malicious mischief. Extinguished by No. 3 Hose, Assistant Chief.

Nov. 8. — Station 54. 2.25 P.M. Washington Street. Wood-land, 10 acres. Cause, locomotive sparks. Apparatus present: Engines 3 and A; Hose 2, 5, 6; Truck 1. Chief and Assistant Chief.

Nov. 8. — Telephone. 4.10 P.M. Mill and Cedar Streets. Brush. Cause unknown. Extinguished by No. 3 Hose, Assistant Chief.

Nov. 9. — Station 35. 8.10 A.M. Crescent Street. Two-story frame dwelling. Owned by Henry Fewkes. Occupied by——Penniman. No damage. Cause, children playing with matches. Apparatus present: Engines 1 and A; Hose 2, 4, 5, 6; Truck 1. Chief and Assistant Chief.

Nov. 26. — Station 4. 4.30 P.M. Melrose Street. Two-story frame dwelling. Owned by Michael O'Donnell. Damage, slight. Cause, children playing with matches. Apparatus present: Engines 1 and A; Hose 2, 4, 5, 6; Truck 1. Chief and Assistant Chief.

Dec. 6. — Station 64. 5.05 P.M. Bowdoin Street. Three-story frame dwelling. Owned by Vivian Greenidge. Unoccupied. Loss, \$287. Insured. Cause, over-heated furnace-pipe. Apparatus present: Engines 3 and A; Hose 4, 7; Truck 1. Chief and Assistant Chief.

Dec. 15. — Station 61. 11.12 P.M. High Street. One-story frame shed. Owned by Lewis Hurd. Loss, \$75. No insurance. Cause, incendiary. Apparatus present: Engines 3 and A; Hose 7; Truck 1. Chief and Assistant Chief.

Dec. 22. — Station 91. 6.20 P.M. Boylston and Jackson Streets. Two one-story frames. Boiler-house and shed. Owned by W. D. Philbrick. Loss, \$175. Insured. Cause, sparks from boiler. Apparatus present: Engines 3 and A; Hose 7; Truck 1. Chief and Assistant Chief.

Dec. 30. — Station 18. 6.15 P.M. Bellevue Street.

Dec. 30. — Second, 18. 6.20 P.M. Unnecessary. Two-story frame. Head-house for conservatory. Owned by Henry E. Cobb. Loss, \$75. Insured. Cause, improperly constructed smoke-flue. Apparatus present: Engines 1, 3, A; Hose 2, 4, 5; Truck 1. Chief and Assistant Chief.

RULES AND REGULATIONS FOR THE GOVERNMENT OF THE NEWTON FIRE DEPARTMENT.

CHIEF OF DEPARTMENT.

The Chief of Department shall have the sole and absolute command at fires and alarms of fires over all members of the Department and of all other persons present at fires, and of all apparatus and appurtenances belonging to the Department, and direct all measures he may deem proper for the extinguishment of fires. He shall devote his whole time to the performance of the duties of his office. He shall visit the engine, hose, and truck stations daily, if possible (Sundays excepted), and report to the fire committee or board of aldermen such suggestions or recommendations as he may deem necessary. He may, from time to time, issue such orders for the government of the members as he may deem necessary, subject to the approval of the mayor and aldermen.

He shall have power to suspend any officer or member of the Department for insubordination, disorderly conduct, or neglect of duty, said suspension to continue, pending the action of the mayor and aldermen.

ASSISTANT CHIEF.

In the absence of the Chief of Department the Assistant Chief shall have the same authority, and exercise the same powers, as the Chief of Department. On arrival at fires he

shall report to the officer in command, and when on duty wear his fire-hat.

He shall have, under the direction of the Chief of Department, general supervision and management of all the telegraph apparatus belonging to the Department, and every thing pertaining to the same. He shall keep the same at all times in perfect working order, and repair all breaks in the most expeditious manner, reporting to the Chief of Department for all necessary supplies, and such improvements as he may think advisable. When additional help is necessary, he will make application to the Chief of Department; and, when in the immediate vicinity of the Department houses, he may obtain the assistance of the regular members, by direction of the Chief of Department. He shall give necessary instructions to persons in the Department and to key-holders. He shall devote his whole time to the duties of the position.

ENGINEERS.

The engineers shall have full control of the engine, bunk, and meeting rooms and basements, and shall report to the Chief of Department at once the name of any member of the Department, or other person, guilty of any disorderly conduct, or violation of the rules and regulations; also any damage which their apparatus, or any part of it, their houses, or furniture, may have sustained. They shall keep an account of all supplies that come to the station, and promptly report when materials are required for use; keep their engines at all times in condition for immediate service. Delays or accidents resulting from neglect will be sufficient cause for suspension or discharge. They shall instruct their stokers in the management of the engines. The use of all

patent preparations for cleaning the metal is strictly prohibited. All material for polishing will be furnished from headquarters. Keep the safety valve set at eighty pounds, and run the engines according to the line of hose; a hundred pounds will be carried only when working through an extra long line, or two lines of, say, five hundred feet each. Water-pressure will never exceed a hundred pounds, except on special order from the Chief or Assistant Chief of Department.

The following whistle-signals will be made use of in this Department until further orders:—

One whistle, signals pipemen to look out for water.

Two whistles, signal for burst hose.

Three whistles, signal for coal.

Two short and one long whistle, signal, "Make up."

Engineers will be on duty at all times. No member shall shut off the water, or in any manner move the machinery attached to the engine, except at request of the engineer.

When the services of the engine are not required, draw the fire, always leaving sufficient quantity for rekindling in case of another alarm while returning. All fuel partially consumed shall be preserved, and not be left burning in the streets.

DRIVERS.

Drivers permanently employed shall be on duty at all times. They shall be held personally responsible for their stables, and for the care and management of their horses. They must not drive them faster than is consistent with the safety of the public and of the apparatus of the Department. They will be held responsible for any damage caused by

them, or carelessness displayed in conveying their apparatus to or from fires. Racing to or from fires will not be allowed under any circumstances. If the apparatus of two or more companies shall proceed to or from a fire on the same street, they shall do so in single file. Returning from fires, they shall drive at a moderate rate of speed. On arriving at fires, the horses shall be blanketed, and kept moving, if possible; and upon returning to the house, if wet by perspiration, they must be immediately rubbed dry. These instructions will also apply to drivers of hose-carriages and tenders.

EXERCISE HOURS.

The horses used exclusively by this Department will be exercised daily, in accordance with the following order:—

IN BOARD OF ALDERMEN,
April 21, 1884.

Ordered, That on and after May 1, 1884, the several horses permanently employed in the Fire Department shall be exercised daily (Sundays excepted), and in the following streets, except when otherwise ordered by the chief of Department:—

No. 1 Engine. — Washington to Church, to Eldredge, to Vernon, to Park Streets.

No. 2 Engine. — Washington to Elm, to Webster, to Waltham, to Chestnut, to Margin Streets.

No. 3 Engine. — Willow to Beacon, to Crescent Avenue, to Pleasant, to Centre, to Willow Streets.

No. 1 Truck }
No. 4 Hose } Washington, Parsons, to Central Avenue.

Exercise hours to be regulated by Chief of Department, and not to exceed one hour nor less than one-half hour. The rules governing inclement weather and holidays will remain in force. Any employee failing to conform to the above order shall be subject to suspension.

H. L. BIXBY,
Chief of Department.

I. F. KINGSBURY,
Clerk.

when the horses have performed no duty within the twenty-four hours next preceding. The horses will not be exercised on public holidays, and never speed them faster than a slow trot.

**"RIGHT OF WAY WHEN PROCEEDING TO FIRES," AS
ACCORDED BY LAW.**

[Chap. 37, Acts 1874.]

An Act to Punish the Wilful Obstruction of Fire Engines, etc.

Whoever wilfully and maliciously obstructs or retards the passage of any engine, or other apparatus, of any Fire Department, while going to a fire, through any street, lane, alley, or other way, shall be punished by imprisonment in the House of Correction not exceeding three months, or by a fine not exceeding fifty dollars. [*Approved Feb. 28, 1874.*]

All drivers of this Department will govern themselves by the above law, and use the utmost discretion at all times to avoid accidents. Hose-carriages, in response to alarms of fire, will follow the engines to which they belong. Call-drivers of hose-carriages will be required to sleep in their respective stations.

STOKERS.

The stokers shall respond promptly to all alarms, and, when in quarters, they will assist in hitching up. When on duty at fires, they shall be under the direction of their respective engineers, who shall require their whole and undivided attention. On return from fires, they shall remain on duty until relieved by their engineers. They will be required to sleep in their respective stations.

FOREMEN.

It shall be the duty of the foremen of all companies where permanent men are not employed, to see that the apparatus committed to their care, and the several stations in which the same are deposited, and all things in or belonging to the same, are kept neat and clean, and in order for immediate use; to see that the snow is cleared from the sidewalks and driveways connected with the stations under their charge.

FINES.

Foremen of companies will see that the following fines for non-attendance are rigidly enforced:—

For absence from fires and alarms	\$1 00
For absence from regular and special meetings . .	50

ASSISTANT FOREMEN.

The assistant foreman shall, in the absence of the foreman, perform all the duties and exercise the same authority as the foreman.

MEMBERS.

The members of the several companies shall, upon an alarm of fire from the section of the city to which they are assigned for duty, proceed promptly to the place of the fire in an orderly manner, report to the foreman, and perform any duty that may be required of them. They shall remain on duty until relieved by orders, which shall be given only by the officer in command. If the company to which they are attached does not respond to the alarm on first call, they shall proceed to their engine, hose, or truck stations, and remain thirty minutes, unless called into service or relieved

by dismissal. No member shall be absent from duty for a longer period than one month, except in case of sickness, or by special permission of the Chief of Department. No person whose occupation requires his daily absence from the city will be eligible to membership in this Department. Any officer or member of this Department who shall remove from the city shall thereupon cease to be a member; and all members of the Department will be required to live within a reasonable distance of their respective stations.

SUBSTITUTES.

Each company may have two substitutes to take the places of call-members absent from the city or disabled by sickness. They shall be approved by the Chief of Department, and shall, if for services rendered for a period of fifteen days or more, receive the same compensation as their principal, to be deducted from their principal's pay. Any substitute serving for a less time than fifteen days shall be paid the amount of fines imposed on his principal for non-attendance at fires or alarms. Any member failing to pay his substitute on the following pay-day shall be subject to dismissal. No substitute can be assigned to duty in place of his principal during the time of a fire or an alarm of fire.

BUNKERS.

Call-men to whom beds are assigned will be required to retire at or before 11 P.M., unless excused by the engineer or person in charge of the station, and will not be allowed to use or occupy the same during the day, unless deprived of their usual rest by the performance of active fire duty, or in case of sickness sufficient to require the use of the same.

No visitors will be allowed in the bunk-rooms after hours, or at any other time while the beds are occupied. It shall be the duty of the engineer to immediately report to the Chief of Department any misconduct or violations of the rules on the part of persons occupying said beds. The occupant of each bed will be held responsible for the cleanliness of the same, and for any damage to either bed or bedding through carelessness. All members occupying sleeping quarters in the engine, hose, and truck stations shall vacate their beds from May 1 to Oct. 1, at 6.30 A.M., and from Oct. 1 to May 1, at 7 A.M.

HORSES AND FEEDING.

The system of feeding shall be as follows, particular care being exercised not to feed or water the horses while too warm : —

Four quarts of oats morning and night; this, with about eight or ten pounds of hay after bedding the horses, will constitute the daily allowance for each horse, and must not be exceeded. But when it shall be ascertained that a less allowance is sufficient, the driver will exercise discretion as to the quantity. The stalls to be cleaned early in the morning; after breakfast the horses groomed and the harnesses cleaned. Horses sick or disabled will be immediately reported to the Chief of Department. No alteration or changes in harness will be permitted, except upon authority of the Chief of Department. When horses are in the shop for shoeing, the drivers shall remain with them, and shall report to the Chief of Department any unnecessary delay, or any work improperly executed, and will allow but one shoe to be removed at a time.

BADGES.

All members of the Department shall be provided with a badge, to be known as the Regulation Badge of the Department, which shall be worn in a conspicuous place during the time they are on duty ; and no member shall lend his badge on any pretext whatever. Any member losing his badge shall immediately notify the Chief of Department, and use all diligence to recover the same. He shall be required to pay for the same before another badge will be provided, the money so paid to be refunded should the badge be found. These badges shall at all times remain the property of the city. Any member loaning his badge to any person not connected with the Department shall be subject to dismissal. No person will be recognized as a member of this Department unless wearing his badge.

ROLL-CALL.

Upon returning from a fire, or an alarm of fire, the assistant foreman, or, in his absence, the foreman, shall call the roll, and report to the Chief of Department any member absent, and the excuse for the same; and in no case shall the permanent members act as substitutes for the call members, or answer for them at roll-call.

LEAVE OF ABSENCE.

No permanent member shall leave the city, or be granted leave of absence, without notifying the Chief of Department, and procuring a substitute to his acceptance; and the substitute shall be on duty before the applicant leaves his post; and the pay of the substitute may be deducted from the pay of the principal. Any member of the call-force

expecting to be absent from the city shall notify the foreman of his company, and procure a substitute to his satisfaction. Whenever leave of absence is granted to bunkers, they shall report the same to the person in charge of their station, and shall, in like manner, report their return.

SUPPLIES.

No member of the Department will be allowed to make any purchases for the Department chargeable to the city, except by order of the chairman of fire committee or Chief of Department.

MEALS.

For permanent members three hours daily will be allowed for meals, and will be so arranged that there shall be at all times one member on duty.

DUTIES AT FIRES.

At all fires, the first officer arriving shall, in the absence of the Chief or Assistant Chief, and until his arrival, act as Chief of Department, and be obeyed and respected accordingly. The men are required to move quickly, and obey orders promptly and without criticism. The officers in charge of the several companies shall, immediately on their arrival at a fire, report to the officer in command, and remain for orders. No company shall leave the fire-grounds, or take the apparatus of which they have charge therefrom, without the order or permission of the officer in command. Any neglect of duty, disobedience of orders, or disrespect to officers, shall be reported to the Chief of Department. No member shall wilfully or maliciously direct a stream of water upon any fireman or citizen. All disputes which may

arise between companies or individual firemen when on duty shall be settled by the engineer in command. Members of companies that are not in service at fires will not enter the buildings unless ordered, but remain convenient to the fire, equipped, and ready for orders.

GOING TO OR FROM FIRES.

Order and decorum will be preserved when going to or from a fire or an alarm. To guard against collision and accident when proceeding to fires, the gongs will be struck when approaching street-crossings, turning corners, and approaching the fire-grounds.

RIDING TO FIRES.

All drivers will be held responsible for any unnecessary overloading, and will in all cases judge of the ability of the horses, the condition of the streets, and the distance to travel. The men will mount and dismount as ordered by them. Officers will avail themselves of any opportunity to ride to fires (excepting on engines), to the exclusion, if necessary, of the men.

FIRE-GROUNDS.

All engine and hose companies responding to second or general alarms will connect, but will not lay their lines until they have reported to the officer in command at the fire for orders.

STATIONS.

Stations of the Department shall be open from 10 A.M. until 10 P.M. for visitors, and at any other time for inspection by members of the city government. On the sabbath all stations must be closed; and it is made the duty of the

engineer, or person in charge, to see that order and quiet are preserved. All work other than that absolutely necessary will be omitted for the day. The permanent members of each station shall once in each week scrub the floors of their respective stations, and at all times keep them neat and clean. The members in charge of the several stations shall personally attend to the receiving of visitors, whether members of the city government, officers of the Department, or citizens. Citizens visiting the stations shall be courteously treated, have reasonable questions answered, and any proper information given. All members detailed to sleep in the stations must be in their quarters at the time stated for closing the station, unless otherwise excused, and all other persons must leave at that time.

DRILL.

Until further notice the truck company will drill once each month, from May 1 to Oct. 1, and all other companies at such times as may be ordered by the Chief of Department.

CONDUCT.

All members of the Department are strictly required in their intercourse with each other, social or official, to observe a courteous demeanor; and officers or men, in addressing each other, will do so in a respectful manner. While on duty at fires, the greatest degrees of silence compatible with a proper discharge of duty will be required. No profane or ungentlemanly language, or disorderly conduct, will be allowed on the part of any officer or member of the Department when on duty.

No spirituous or malt liquors will be allowed in any

station of the Department or at any fire. If any member shall enter any station of the Department intoxicated, or become intoxicated at a fire, he shall be subject to dismissal.

No gambling of any kind will be allowed in any station of the Department.

GENERAL RULES.

RULE 1.

No driver of engine, hose, hook-and-ladder truck, or other vehicle, shall drive over any line of hose if it can be avoided.

RULE 2.

No company will be allowed to take its apparatus from their quarters, except in case of fire, without consent of the Chief of Department.

RULE 3.

The hose must be changed on reels once in four weeks, unless otherwise ordered by the Chief of Department, for which purpose the foreman will warn the members of his company detailed for this purpose; and any member absent, unless excused, will be fined the same amount as for absence from fires.

RULE 4.

Any member permanently employed, who refuses or neglects to pay any just debt contracted during his connection with the Department, it shall be deemed sufficient cause for suspension or discharge.

RULE 5.

No permanent officer or member of the Department shall attend a caucus or political convention as a delegate, dis-

tribute tickets at any election, or take any part whatever in political matters other than to exercise a right of suffrage.

RULE 6.

All members of the Department will be required to address officers by their respective titles when on duty.

RULE 7.

When any member shall leave the Department, he shall thereupon return his badge, key, and copy of rules and regulations, in good condition, to the foreman of his company, who shall immediately notify the Chief of Department; and any member failing so to do shall have the amount deducted from his pay.

RULE 8.

No balls, parties, or social gatherings of any description shall be held in any building in charge of the Department, except on permission from the Chief of Department.

RULE 9.

No property belonging to the city will be loaned for any purpose whatever, except upon written order of the Chief of Department.

RULE 10.

No hoseman or truckman at call shall be entitled to pay for less than fifteen days' service. All appointments shall, as far as practicable, be made to date from the first or fifteenth day of each month.

RULE 11.

In the use of hydrants all members of the Department are instructed to use great care in the opening and closing of

the same, and to see that each cap is properly adjusted before leaving. The first company connecting with a hydrant in case of fire will leave one member in charge of the same ; should a second company or line desire connection, it will not be made until the line is complete to the fire, and orders given for water. Exceptions to this are ordered for engines, which will be given immediate connection (if ordered into service), and the hydrant left in charge of the engineer.

RULE 12.

Officers of companies, hosemen, and laddermen will wear their fire-hats when on duty.

Approved by the Board of Mayor and Aldermen, April 19, 1880.

Attest: EDWIN O. CHILDS, *Clerk.*

H. L. BIXBY, *Chief Fire Department.*

City of Newton.

Fire Department Headquarters, City Hall, West Newton.

BILL OF DRESS FOR THE UNIFORMED FORCE OF THE FIRE DEPARTMENT OF THE CITY OF NEWTON.

FIRE-CAP.

For Chief of Department.—A white leather cap with eight cones, having a white leather stitched front depending from a gilt eagle head, and attached to the front of the cap, with the words "Chief" in black letters stitched on white ground, with "Fire Department" in the centre, and the word "Newton" at the bottom.

For Assistant Chief of Department.—Same as for the Chief of the Department, except that the rim and cape will be black on both sides and lettered, "Ass't. Chief, Fire Department, Newton."

For Officers Engine and Hose Companies.—Same as Chief of Department, except that it will be of black leather, and have a white leather stitched front, with the letters and figures cut out of it on a background of black patent leather.

For Officers Truck Companies.—Same as officers engine companies, except that the letters will be on red ground.

For all Members Engine and Hose Companies.—Same as officers, except that the fronts will be of black patent leather, with letters on background of white patent leather.

For Members Truck Companies. — Same as for officers of truck companies, except that the fronts will be of red patent leather, with letter on background of white patent leather.

FATIGUE CAP.

For Chief of Department. — Of United States Navy pattern, made of dark blue cloth, pure indigo dye, with band one and one-half inches, and quarters one and three-quarter inches high, stiffened with hair-cloth sewed into the seam of top and quarters, the sides to be ventilated, a narrow welt around bottom and top seam of cap, the inner band to be of strong, serviceable leather, the visor to be plain, solid, black patent leather, two inches wide, with rounded corners, the chin straps of black patent leather one-half inch wide, with slides of same material, straps to be fastened to cap on each side with small regulation button.

The insignia of rank to be placed on the quarters in the centre of the front, the lower part resting nearly on the upper edge of band.

For Assistant Chief of Department. — Same as for Chief of Department.

For Engineers Steamers, Drivers, Etc. — Same as for Assistant Chief, but omitting insignia of rank, and substituting therefor a white metal badge, as per pattern at headquarters, to be fastened to the cap, with the lower end resting upon the upper lower edge of band.

For winter service, caps known as "Scotch Havelocks," may be substituted for the "Regulation Cap."

HATS FOR SUMMER WEAR.

For Chief and Assistant Chief of Department. — Light-gray felt helmets, with black silk band one inch wide, rim bound with the same, with insignia on the front and just above the band, to be ventilated each side, the sweat-band to be of leather one and one-half inches wide and ventilated.

For All Other Members. — Of brown Mackinac braided straw (braids about five-eighths of an inch wide), sides about three and one-half inches high, slightly tapering at crown, with black, ribbed-silk ribbon band one and three-quarters of an inch wide, tied in a single bow-knot on left side, brim about two and one-quarter inches wide, bound with seven-eighths-inch black silk ribbon; the sweat-band to be of leather about one and one-half inches wide, the bottom of crown to be lined with paper. The badge as prescribed above to be worn upon the ribbon in front.

COATS.

For Chief of Department. — A double-breasted, close-fitting sack coat, made of dark blue cloth, pure indigo dye, cut to button close to the neck, with rolling collar, and to reach to a point midway between the hip-joint and the bend of the knee; to have eight medium-sized regulation buttons on each breast, grouped in pairs; the cuffs to be made to fit the wrists, and to be closed with three small regulation buttons; a blind pocket on each breast, with plain flaps; two inside breast pockets; the sleeves to be cut so as to be conveniently worn inside the overcoat; the coat to be lined with black Italian cloth, and the sleeves with linen. The prescribed insignia of rank to be placed in the end of collar on each side.

For Assistant Chief of Department. — Same as for the Chief of the Department, except that there will be seven buttons placed equidistant, and the insignia of rank as prescribed.

For All Other Members. — The coat will be single breasted, with six medium-sized buttons.

For Summer Wear. — A coat may be worn made of dark blue flannel, indigo dye, and in all other respects as above, but without lining.

OVERCOATS.

For Chief of Department. — A double-breasted frock coat with rolling collar, lap seams, of best heavy, dark blue cloth, pure indigo dye, in length to reach to the knee, to button close up to the neck, with eight large regulation buttons on each breast, grouped in pairs, three on each skirt behind and three of small size on each sleeve at cuff, the skirts to be open behind, blind pockets on each skirt outside, with flaps, also on breasts, and two inside breast pockets.

The skirts to be lined with black Italian cloth, and back with red twilled flannel, sleeves with linen.

For Assistant Chief of Department. — Same as for Chief of Department, except there shall be seven large regulation buttons on each breast, placed equidistant.

For All Other Members. — Same as for Chief of Department, except that the seams will be plain, with six large regulation buttons on each breast, placed equidistant.

VEST.

For Chief of Department. — A single-breasted vest made of same material as coat, without collar, and to button with eight small regulation buttons, grouped in pairs; inside to be

lined with light-colored silesia ; back to be made of black twilled silesia.

For Assistant Chief of Department. — Same as for Chief of Department, except that there shall be seven small regulation buttons, placed equidistant.

For All Other Members. — Same as for Chief of Department, except that there shall be six small regulation buttons, placed equidistant.

For Summer Wear. — A vest may be worn made of light cloth or flannel, dark blue, indigo dye, and in all other respects as above prescribed.

TROWSERS.

For Chief of Department. — To be made of same material as the coat, with a lap seam ; to be cut to fit close around the waist, but loosely around the hams and legs to admit of their free use.

For All Other Officers and Members. — Same as for Chief of Department, except that they will be made with plain seam.

For Summer Wear. — Trowsers may be made of lighter material (dark blue), in the manner prescribed above.

SHIRT.

For Chief and Assistant Chief of Department. — White linen or muslin, with rolling or standing collar.

For All Other Members. — To be of white cotton or linen, with rolling collar.

CRAVAT.

For All Officers and Members. — A small necktie of black silk to pass once around the neck, and tie with a double bow

and flat knot in front, the ends to extend not more than three inches from the knot.

INSIGNIA OF RANK.

For Chief of Department. — Embroidered upon dark blue cloth in silver, five trumpets, measuring one and five-sixteenths inches, each crossed with bells outward and projecting beyond mouth pieces, so as to form a design one and one-half inches in diameter.

For Assistant Chief of Department. — Same as for Chief of Department, except that there shall be three trumpets, measuring one and one-half inches, each crossed with bells downward.

For All Other Members. — A white metal badge of the prescribed pattern.

COAT BADGE.

For Chief of Department. — A gilt badge from the Department die, as follows: In semi-circle at the top the words, "Chief Fire Department;" in the centre, and resting on a ladder, the city seal; beneath, over crossed trumpets, the word "Newton;" below this, the monogram "F. D.;" the whole badge to be two and one-half inches long by one and one-half inches wide, to be fastened with a pin and improved catch.

For Assistant Chief of Department. — Same as for Chief of Department, except to prefix the word "Assistant."

For All Members Engine Companies. — Same as for Chief of Department, except that the badge will be of white metal, with "Newton Fire Department" at the top, below the seal the word "Engine," and beneath this the registered number.

For All Members Truck and Hose Companies. — Same as for

engine companies, except that "Truck " and "Hose " will be substituted respectively above the registered number.

BUTTONS.

For All Officers and Members.—To be of white metal of the following description: For overcoat (except the cuffs) to be round, one inch in diameter, with convex roughened face, having the initials "F. D." in block letters one quarter of an inch high, in the centre the words "City of," at the top, and "Newton" at the bottom, in block letters one-eighth of an inch high, near and parallel to the rim around the button, which rim is to be bright, and about one-sixteenth of an inch wide, the button to be attached to the coat by means of an eye of white metal wire securely fastened to it.

For the coat (except the cuffs) same as for the overcoat, except that it is to be three-quarters of an inch in diameter, with the dimensions of all the parts described proportionately reduced in size.

For vests, cuffs of coat, and fatigue cap, same as for overcoat, except that it is to be five-sixteenths of an inch in diameter, with the dimensions of all parts described proportionately reduced in size.

All officers and members will be held responsible for the safe keeping, proper use, and return of the articles above enumerated, and they are liable to the following penalties for the loss of either of them: **For the loss of coat badge, \$3.50. For the loss of cap badge, \$1.00. For the loss of fire-hat, \$4.50. For the loss of buttons, \$0.05 each.** No part of the uniform prescribed in this order is to be loaned to any person, whether in or out of the Department, or used for any but the legitimate purposes of the same. This order is imperative.

All members shall wear the uniform prescribed in the above order when on duty, except while cleaning apparatus, quarters, etc., when old clothing may be worn. The purpose of this regulation is, that the officers and members of the Department may at all times, except when in the performance of necessary labor in quarters, appear in proper dress. No officer or member in uniform shall smoke in the streets, or public places, or upon the apparatus floor, where smoking rooms are provided. Officers and men, when upon leave of absence, must wear the uniform entire, or no part of it. Whenever the uniform is worn, it must be in an unsoiled condition, coat buttoned to the neck, buttons, badges, and boots properly polished, and their persons at all times neatly and tidily dressed. While actually wearing the overcoat, the undercoat may be dispensed with, and a cardigan jacket substituted, but the overcoat must be buttoned at all times when on the street or on duty, and no part of the uniform will be laid aside until bedtime.

The Assistant Chief of Department shall inspect all uniforms or parts of uniforms before they are worn, and reject all found not in conformity to the provisions of this order.

To take effect on or before September 1, 1887.

In the Board of Mayor and Aldermen, April 4, 1887.

Adopted,

HENRY L. BIXBY,

Chief Fire Department.

I. F. KINGSBURY, *Clerk.*

ORDINANCES RELATING TO FIRE DEPARTMENT.

ORDINANCE XIII.

Fire Department.

Department
established.
Charter, §7.

SECTION 1. A Fire Department is hereby established.

There shall be a Chief of Fire Department, an Assistant Chief, who shall be operator of the fire alarm under the direction of the superintendent telegraph, three steam fire-engine companies, four hose companies, and one truck company.

Number men
and officers.

Each steam fire-engine company shall consist of eleven men ; to wit, a foreman, an assistant foreman (who shall also be clerk), an engineman, a driver, a fireman, and six hosemen.

Each hose company shall consist of six men ; to wit, a foreman, an assistant foreman (who shall also be clerk), and four hosemen.

Each truck company shall consist of thirteen men ; to wit, a foreman, an assistant foreman (who shall also be clerk), a driver, and ten truckmen.

Chief.
Duties.

SECT. 2. The Chief of Department shall be responsible for the discipline, good order, and proper conduct of the officers and men constituting the Department, and for the good condition

of all houses, reservoirs, hydrants, wells, engines, hose, hose-carriages, hooks and ladders, trucks, and all apparatus and furniture thereto belonging, and connected with the Department. He may suspend any officer or member; and shall forthwith refer his case to the board of aldermen for its action. He shall have the superintendence and, under the direction of the Joint Standing Committee on the Fire Department, the control of the engine and other houses used by the Department, of the furniture therein, and of the engines and apparatus, as well as of all other property appertaining to the Department.

May suspend.

Superintendence and control of houses and apparatus.

SECT. 3. The Chief of Department, or, in his absence, the Assistant Chief, shall have sole and absolute control and command of all the other members of the Department and of other persons present at fires.¹ The officer in command of the

Sole command of members.

¹ PUBLIC STATUTES. — SECT. 3. The fire-wards, or any three of them, present at a place in immediate danger from a fire, or, where no fire-wards are appointed, the selectmen, or mayor and aldermen, present, or, in their absence, two or more of the civil officers present, or, in their absence, two or more of the chief military officers of the place present, may direct any house or building to be pulled down or demolished, when they judge the same to be necessary in order to prevent the spreading of the fire.

Fire-wards, etc., may order buildings to be pulled down.

SECT. 4. In cities and towns which, by vote of the City Council, or of the legal voters respectively, have accepted the provisions of this section, or of chapter two hundred and one of the statutes of the year eighteen hundred and seventy-three, the engineer of a Fire Department in command at a fire shall, to the exclusion of all other persons, have the power conferred by the preceding section.

Engineer to have power of fire-wards under Sect. 3.

[Stat. 1873, chap. 201. Accepted Feb. 12, 1877.]

Acceptance.

company which first arrives at a fire shall be the officer in command until the Chief of Department or the Assistant Chief arrives.

Rolls.

SECT. 4. The Chief of Department shall keep rolls of the companies, specifying the name, age, occupation, and residence, and the date of the admission and discharge, of each member of the department; and he shall keep an accurate account of all property belonging to it.

Reports of
fires, etc.

He shall, at the close of each three months, and oftener if required, make to the city council a detailed report of the condition of the Fire Department, of losses and accidents by fire, with the causes thereof, as well as they can be ascertained, and of the description of the buildings and other property destroyed or injured, the amount of insurance, and the names of the owners.

Foremen.

SECT. 5. The foremen shall preserve order and discipline in their respective companies, and shall promptly report in writing the name of any member guilty of misconduct to the Chief of Department, who shall, if he thinks it proper, report thereon to the mayor and aldermen.

Rolls.

The foremen shall cause to be kept by the respective clerks rolls of the companies, specifying the time of admission and discharge of each member, together with the age, residence, and occupation of each member, and a record of all the city's property intrusted to their care. Their rolls and record-books shall at all times be subject

to the inspection of the Chief of Department, and they shall furnish him with copies or abstracts thereof at his request.

SECT. 6. It shall be the duty of the men permanently employed in the Department to keep the apparatus committed to their care, and the several buildings in which the same is deposited, and all things intrusted to their care, clean, and in order for immediate use, and to wash and dry the hose of the entire Department when required so to do; and they shall clear the snow from the sidewalks and driveways connected with the houses under their charge.

Care of apparatus, etc.

SECT. 7. No company shall leave the city in case of a fire in another city or town, except by order of the Chief or Assistant Chief of Department.

Companies not to leave city, except.

SECT. 8. No member shall be transferred from one company to another, except by order of the Chief of Department.

Members not to be transferred, except.

SECT. 9. Every member of the Department shall wear at every fire such a badge as the Chief of Department shall prescribe; and no person without such badge shall, except by permission of the officer in command, enter within lines formed at a fire by such officer.

Badge.

SECT. 10. The Chief of Department shall examine all places where shavings or other combustible materials are deposited or collected; and shall see to the removal of the same, whenever, in his opinion, the same are dangerous; and shall

Shavings and other combustible material. Pub. Stats., chap. 104, §§ 1-12.

direct the owners, tenants, or occupants of such places to remove the same, which they shall do forthwith; and, in case of refusal or neglect, he shall cause the same to be removed at the expense of such owners, tenants, or occupants.

Inspection of
buildings by
Chief.

Steam
engines.

Camphene,
etc.

SECT. 11. The Chief of Department shall observe all buildings in which steam-engines are used, and all buildings in process of erection or alteration, and make a record of such of them as in his judgment may be dangerous, and report thereon to the mayor and aldermen forthwith. Whenever, in the opinion of the Chief of Department, any camphene or other explosive or inflammable fluid or material should be removed, he shall forthwith notify and direct the owner, tenant, or occupant of the premises upon which the same are situated, to remove the same, which he shall forthwith do. In case such tenant, owner, or occupant shall refuse or neglect so to do, the Chief of Department shall cause the same to be removed at the expense of such owner, tenant, or occupant. No person shall obstruct the Chief of Department in carrying out the provisions of this section.

Chief to pre-
pare pay-roll.

SECT. 12. The Chief of Department shall, on the last day of each month, prepare a pay-roll of all persons regularly employed in the Department, and present it to the committee on the Fire Department for their action. On the last day of June and of December in each year, the clerk of each company shall make a roll, bearing the

full name, age, occupation, and residence of every member of the company, specifying also the number of times the company has been called out, and the attendance of each member, to which shall be appended the following certificate: —

“ We, the undersigned, do hereby certify that, according to the best of our knowledge and belief, the foregoing persons are members of — company, and that said company had consisted of — members during the last six months ; that during that time they have performed all the duties incumbent upon them as firemen, have been present at every turnout of the company, or been duly excused; and that they are entitled to all the privileges and pay of firemen.”

The certificate shall be signed by the foreman and clerk, and shall be delivered to the Chief of Department.

Certificate of
pay-roll.

The Chief of Department shall examine these rolls, and, if they are found correct, shall approve them, and present them, with the pay-rolls of the several companies, to the committee on Fire Department for their action.

SECT. 13. The Chief of Department shall have the care and management of the rooms, apparatus, and machinery connected with the fire-alarm telegraph, and shall determine to whom shall be intrusted the keys of the signal-boxes. He shall prepare rules and directions for giving alarms of fire through the telegraph.

Fire-alarm
telegraph.

Keys.

SECT. 14. No unauthorized person shall open any of the signal-boxes, except in case of fire, or

Signal-boxes.

interfere with the wires or the poles or other supports of the wires.

False alarms. SECT. 15. The Chief of Department shall see that every person raising a false alarm of fire is prosecuted.

Gambling. SECT. 16. No gambling shall be allowed in any building occupied by the Fire Department, nor shall spirituous liquors be kept or used there.

Water from
hydrants, etc. SECT. 17. No person shall draw water from the reservoirs or fire-hydrants, except in case of fire, and except as otherwise provided;¹ nor shall any engine, hose, or truck be taken out of the city without permission of the Chief or Assistant Chief. No part of the apparatus shall be taken from the city, unless to a fire, without special permission from the mayor and aldermen.

SECT. 18. No occupant of any building or room in which there is a hatchway or trap-door shall suffer the same to be left open at night.

Disabled
members. SECT. 19. Any member of the department injured or disabled while on actual duty shall receive pay for the time lost in consequence, not exceeding three months.

Setting fires
wantonly to
trees, etc. SECT. 20. No person shall wantonly or carelessly set fire to any tree, bush, grass, leaves, brushwood, rubbish, or other substance in any place in the city of Newton.

Penalty. SECT. 21. Whoever shall violate any provision of this ordinance shall forfeit a sum not exceeding twenty dollars.

¹ Ordinance XV., §19.

ORDINANCE XXIV.

Buildings.

SECTION 1. No person shall erect, alter, or rebuild, or essentially change any building or any part thereof, for any purpose other than a dwelling-house, without first obtaining in writing a permit from the board of aldermen. The application for such permit shall specify the location and size of said building, the material of which it is to be constructed, and the use for which it is intended. Permit.

SECT. 2. No person shall use any building, or part thereof, for any purpose rendering said building, or buildings adjacent thereto, hazardous, unsafe, or liable to be destroyed by fire, or dangerous to persons or property, without first obtaining a permit, as named in Section 1.

SECT. 3. All chimneys hereafter erected shall be built of brick, stone, or other fire-proof, non-conducting material. All brick flues shall be smoothly plastered inside with mortar from top to bottom, and outside below the roofing. In no case shall chimneys rest upon any flooring without a footing of masonry or iron, supported by iron beams, having a secure bearing on iron at either end. Chimneys and brick flues.

Hearths of fireplaces or grates shall be laid upon brick or other trimmer arches, or upon bars of iron supporting a bed of brick-work. Hearths and grates.

No wood-work of any kind shall be placed at a Wood-work.

less distance than one inch from the outside brick-work of any flue, and in no case shall a nail be driven into the masonry of any flue.

No wood-work shall be placed at a less distance than one inch from any tin or other metal flue or flues, pipe or pipes, used or intended to be used to convey heated air or steam in any building, unless such flues or pipes be cased with metal, leaving a free circulation of air all around the same.

Smoke-pipe.

No smoke-pipe shall pass through any stud or wooden partitions, whether plastered or not, without being guarded either by a double collar of metal, with at least four inches air-space and holes for ventilation, or by a soapstone ring not less than three inches in thickness and extending through the partition.

SECT. 4. Whoever violates any provision of the preceding sections of this ordinance shall be liable to a fine not exceeding one hundred dollars.

ORDINANCE XXII.

Gunpowder and other Explosive Compounds.

Pub. Stats.,
chap. 103, § 56.

SECTION 1. No person shall keep or deposit any gunpowder within the city unless it is well secured in tight casks or canisters.

No person to
keep or de-
posit gun-
powder un-
less, etc.

No person shall keep or deposit more than fifty pounds of gunpowder in any shop, store, or other building which is within the distance of twenty-five rods from any other building or wharf; no person shall keep or deposit more than twenty-

five pounds of gunpowder in any shop, store, or other building which is within the distance of ten rods from any other building; and no person shall keep or deposit more than one pound of gunpowder in any shop, store, or other building which is within ten rods of any other building, unless it is well secured in copper, tin, or brass canisters holding not exceeding five pounds each, and closely covered with copper, brass, or tin covers.

Limit of
amount.

SECT. 2. Licenses may be granted by the mayor and aldermen for the retailing of gunpowder, in form substantially as follows: to wit, —

Licenses.

Gunpowder License No.

LICENSE TO SELL GUNPOWDER IN THE CITY
OF NEWTON.

This certifies that _____ of Newton is (or are) hereby licensed and authorized to sell gunpowder at retail, at _____ on _____ street, being _____ place of business in said city, for one year from the date hereof, at noon, provided _____ shall duly conform to the laws and to the provisions of the ordinance printed hereon. And in case the said _____ shall at any time during the term aforesaid infringe the laws, or any of the provisions of the said ordinance, then this license shall be void.

Dated at Newton this _____ day of _____, in the year of our Lord one thousand eight hundred and _____.

No person shall sell any gunpowder within the city without such license. Every such license shall be in force one year from the date thereof, provided that any such license may be rescinded by the mayor and aldermen, at their discretion.

Sales without
license pro-
hibited.
License may
be rescinded.

Sign.

SECT. 3. Every person so licensed shall keep a sign over the outside of the principal entrance from the street of the building in which powder is kept, on which shall be printed in capitals the words, "Licensed to Keep and Sell Gunpowder."

City clerk to
keep record of
licenses, etc.
Place not to
be changed.

SECT. 4. The city clerk shall keep a record of all such licenses, and of the places designated therein ; which places shall not be changed, unless by consent of the mayor and aldermen in writing. Every person who receives a license shall sign his name to a copy of the rules prescribed in this ordinance, as evidence of his assent thereto.

Exceptions.

Keeping in
magazines.

SECT. 5. The provisions of this ordinance shall not apply or extend to the keeping or storing of metallic cartridges in fire-proof magazines, nor to cartridge manufacturers, so long as they shall keep their powder in canisters, as prescribed in Section 4, and in fire-proof magazines, located and built to the satisfaction of the mayor and aldermen, and so long as such manufacturers allow no more than one hundred pounds of gunpowder in any magazine, or five pounds of gunpowder not made into cartridges, to be in any one workshop at any one time.

Pub. Stats.,
chap. 102,
§§ 59, etc.

SECT. 6. No person, except on military duty in the public service of the United States or of this Commonwealth, shall keep, have, or possess, in any building, place, vehicle, ship, or other vessel within one rod of a dwelling-house, any explosive compound other than gunpowder, in quantity exceeding one-fifth of a pound.

SECT. 7. The mayor and aldermen may license Licenses.
any suitable person to keep, store, and sell such
compound, in accordance with the foregoing pro-
visions.

SECT. 8. Any member of the police or of the
Fire Department may enter the building or prem-
ises of any person so licensed, to make the exam-
ination provided by law, at his discretion; and on
alarm of fire may cause such compound there
deposited to be removed or destroyed, as the case
may require.

SECT. 9. Whoever violates any provision of
this ordinance shall be liable to a fine not exceed-
ing twenty dollars.

ORDINANCE XXVIII.

Telegraph, Telephone, and Electric-Light Lines.

SECTION 1. The Chief of the Fire Department,
under the direction of the mayor and aldermen,
shall have the supervision and charge of all tele-
graph, telephone, and electric lines. He shall
forthwith report to the mayor any violations of
this ordinance.

SECT. 2. No telegraph, telephone, nor electric
line shall be erected nor maintained until the
owner thereof shall file with the mayor and alder-
men a written agreement accepting and promising
to abide by and perform all the conditions and
provisions of this ordinance, and all orders, rules,
regulations, and amendments hereafter made in
addition thereto.

SECT. 3. All writings and authority for the erection of telegraph, telephone, and electric lines shall be subject to the right of the mayor and aldermen to permit other lines to be placed upon the same posts; but this shall not prevent a reasonable compensation therefor.

SECT. 4. On streets where curbstones are set, all posts shall be erected in the sidewalk, within and adjoining the curbstones; and where there are no curbstones, the posts shall be so erected as not to interfere with the gutters. No post shall be erected within fifteen feet of any hydrant, nor so as to interfere with any water-pipe, shade-tree, driveway, or intersection of streets.

SECT. 5. All posts for telegraph, telephone, and electric lines shall be straight, properly trimmed and painted, shall not be less than twenty feet in height from the ground, shall be of iron, cedar, or chestnut, and, if of wood, not less than six inches in diameter at the smaller end, and ten inches in diameter at the ground. Such posts shall be properly set in the ground to the depth of at least five feet. Wherever any wire shall cross any street or way, it shall be at a height not less than twenty-five feet above such street or way, and be protected by guards, and, where practicable, cross at right angles.

SECT. 6. All wires for the transmission of electricity for lighting and motive-power shall at all times be so insulated as to resist abrasion and heat, and be impervious to water. When placed

above the surface of the ground, such wires shall be suspended upon posts ; and, wherever in proximity to other wires, dead guard-wires must be placed so as to prevent any possibility of contact with foreign wires. This rule must apply to both arc and incandescent wires. When any such wire shall be broken, or its insulation become imperfect, the electric current shall forthwith be discontinued, and the wire not used until properly repaired and insulated.

SECT. 7. Wires for the transmission of electricity for lighting and motive-power shall be secured to insulating fastenings of glass, hard rubber, or other approved insulating material. All tie-wires shall be insulated in the same manner as conducting wires. All joints in wires shall be securely made, and where possible soldered, and wrapped with insulating material that will resist heat and abrasion, and be impervious to water. Continuous wires, without joints, shall be used as far as possible.

SECT. 8. Wires for the transmission of electricity for lighting and motive-power, passing through the exterior walls of buildings, shall be firmly incased in substantial tubes of non-conducting material not liable to absorb moisture, and so placed as to prevent water from entering the building along the wire. Outgoing and returning wires for arc-lights shall enter and leave buildings at points one foot at least from each other ; those for incandescent lights shall so enter and leave build-

ings at points at least three inches from each other. In running along outside walls, cornices, and the like, all such wires shall be rigidly fastened by non-conducting fastenings; and where carried over or attached to buildings, must be at least seven feet above the highest point of flat roofs, and one and a half feet above pitch roofs, and placed so as to avoid ladders of Fire Department. They should not be run over or attached to buildings, other than those desiring light and power. In the interior of buildings, all such wires shall be so placed as not to come in contact with iron pipes, posts, nor girders, nor in any way so as to form other circuits or ground connections. In passing through floors or partitions or walls, they shall be surrounded by an insulating tube of substantial material, to protect them from injury by rats and mice. All inside wires must be so placed, as to be easily and thoroughly inspected. Whenever such wires enter a building, a cut-out of simple form and construction shall be provided, and properly attached as near as possible to such entrance.

SECT. 9. The frame and exposed parts of all arc-lamps shall be insulated from the circuit. All such lamps shall be provided with a separate hand-switch, and also with an automatic switch which will close the circuit whenever the carbons do not approach each other, or the resistance becomes excessive. Arc-lamps must be provided with some arrangement to prevent the lower carbon from falling out, in case the clamp does not hold them

securely. For inside use, the globes must rest in a tight stand, that no particles of melted copper or heated carbon can escape. Converters on alternating circuits must be outside of buildings, and must be placed high enough from roof to prevent possible injury to firemen.

SECT. 10. For incandescent lamps, the conducting wire leading to each building and branch circuit shall be provided with an automatic switch or cut-out, or its equivalent, capable of protecting the system from injury by an excessive current of electricity.

SECT. 11. All light and power circuits shall be entirely of metal. No gas, water, nor steam pipe, nor the earth, shall be used as a part of any such circuit.

SECT. 12. In case of fire, the Chief of the Fire Department shall have full power and authority to order and cause any electric wires to be cut or removed, and electric currents discontinued until the fire is extinguished.

SECT. 13. Except by vote of two-thirds of all members of the board of aldermen, no wire for the transmission of electricity for lighting or motive-power shall be attached to posts of the fire-alarm telegraph nor to the posts of any telegraph or telephone company upon which fire-alarm wires are placed. Such wires, excepting when permitted by a like vote to remain, shall forthwith be removed from such posts, whenever any wire of the fire-alarm telegraph is attached thereto.

SECT. 14. All dead wires where crossing public streets or ways shall be removed.

SECT. 15. Upon the completion of any circuit, and before it is used, a plat, showing the location of the wires and posts of such circuit, shall be filed with the Chief of the Fire Department; and any change of such posts or wires shall be reported to him within twenty-four hours.

STATISTICS

From January 1, 1887, to December 31, 1887.

Total alarms	76
Alarms given by citizens	43
Alarms given by police	18
Alarms given by firemen	15
Loss on real estate	\$51,112
Insurance paid on same	\$50,702
Loss on personal property	\$13,507
Insurance paid on same	\$12,707
Loss in excess of insurance paid	\$1,210
Total insurance at risk	\$170,000
Assessed value real estate at risk	\$208,000
Total hydrants	537
Miles of street mains	83
Pumping capacity per diem, gals.	5,000,000
Reservoir capacity per diem, gals.	15,000,000
Total miles accepted and unaccepted streets	136
Area protected by fire department	20 sq. miles

City of Newton

ANNUAL REPORT OF THE TRUSTEES OF THE NEWTON FREE LIBRARY

For the Year ending December 31, 1887.



BOSTON :
PRESS OF RAND AVERY COMPANY.
1888.

BOARD OF TRUSTEES, 1888.

AT LARGE.

JOHN S. FARLOW.
WILLIAM CLAFLIN.
A. LAWRENCE EDMANDS.
JULIUS L. CLARKE.
EDWIN B. HASKELL.

FROM THE BOARD OF ALDERMEN.

WARREN P. TYLER.

FROM THE COMMON COUNCIL.

FRANK J. HALE.



ORGANIZATION FOR THE YEAR 1888.

PRESIDENT.

JOHN S. FARLOW.

SECRETARY.

JULIUS L. CLARKE.

COMMITTEE ON LIBRARY.

PRESIDENT, *ex officio*.

WILLIAM CLAFLIN.

EDWIN B. HASKELL.

JULIUS L. CLARKE.

COMMITTEE ON BUILDING.

PRESIDENT, *ex officio*.

WARREN P. TYLER.

A. LAWRENCE EDMANDS.

FRANK J. HALE.

SUPERINTENDENT.

WARREN P. TYLER.

LIBRARIAN.

ELIZABETH P. THURSTON.

ASSISTANT LIBRARIANS.

LOUISE J. SMALLWOOD.

ETTA P. CLEAVELAND.

CHARLOTTE A. FLANDERS.

JANITOR.

JAMES J. TOWER.

REPORT OF THE TRUSTEES OF THE NEWTON FREE LIBRARY

FOR THE YEAR ENDING DECEMBER 31, 1888.

TO HIS HONOR THE MAYOR AND THE CITY COUNCIL OF NEWTON,
MASS : —

Your attention is respectfully directed to the interesting report of the Superintendent (herewith submitted), which is so exhaustive in all that relates to the Newton Free Library as to leave little to be added by the trustees. The active, voluntary labors of the Superintendent for many years, have been of great benefit to the Library, and the citizens of Newton are under many and lasting obligations to him therefor.

The trustees, knowing and fully appreciating the value of those labors, regret exceedingly that he now feels compelled to retire, in order to obtain that absolute rest so essential for the complete restoration of his health. The confinement consequent on his assumption, since June last, of the combined duties of Superintendent and Librarian, added to his editorial labors, have told too heavily on him. He has our sincere thanks and our earnest wishes for his early and complete restoration.

The trustees take this opportunity to thank the Mayor and City Council for their prompt and cordial action in the enlarging of the library building, and we can truly say that the city of Newton has now a library building, which, for conven-

ience and adaptability to the purposes of a free public library, will compare favorably with any library in the State. Its capacity is now more than double that of the original building, and, with the provision made for additional shelving when needed, is not likely to require further enlargement for twenty years.

In "Edmands Hall," besides procuring much greater facilities for the distribution and delivery of books, we have secured a commodious and much needed reference department. The additional windows in the newspaper reading room (now called "Jewett Hall") have greatly improved it. "Jones Hall," in the second story of the new addition, will afford ample space for all the books for general circulation that the Library will require for many years. Opening from "Jones Hall" is a room specially intended for *reference* uses by the teachers of our public schools and their classes, when required by them for such purposes: it is also intended to be used for meetings of the trustees. On same floor is an admirably designed librarian's room, overlooking "Jones Hall" in the *new*, and the reference department in the old, building. In the lower story of the new building is "Chaffin Hall," a large and commodious room well adapted for, and now used as, a magazine, book, and periodical reading room, highly appreciated by many readers, and is a decided acquisition to the Library. Opening from "Chaffin Hall" on the south is "Read Hall," used exclusively as a public document room, and now well supplied with such,—national, State, county, and municipal. Opening from same hall on the north is the janitor's room, having easy access to all parts of the building.

A careful inspection of the building and its appointments, will, we feel sure, satisfy every one that the money appropriated therefor has been well and judiciously ex-

pended. The trustees cordially invite the members of the City Government, and citizens generally, to visit the Library as often as they can find opportunity, and witness for themselves what has been, and is now being, accomplished there. The trustees have been very much crippled in their purchase of books the past year, in consequence of their being compelled to pay some fifteen hundred dollars for purchase of the additional furniture, gas-fixtures, and incidentals required for the new building, and the laying of new floors, and other expenditures, required by the changes in the old. The incomes of our "Jewett Art," "Read," and other special funds have, in consequence, been closely drawn upon to meet the requirements of the departments dependent in part on those funds. This was unavoidable, as the committee of the City Council felt themselves confined in *their* expenditures to the enlargement of the building only. Under the appropriation made for this current year, we shall be able to make up for this in part; it must be borne in mind, however, that the enlargement of the building, and, as we trust, the continually enlarging usefulness of the Library, will necessarily require a larger yearly expenditure for heating, lighting, and other expenses, which, we have faith to believe, the City Council will always cheerfully provide.

The system for deliveries of books in the several sections of the city continues to work satisfactorily.

Notwithstanding the gratification we feel at what has been accomplished the past year, we have regretfully to record the loss the Library has sustained by the departure of our late librarian, Miss Hannah P. James, to a new field of labor. She has been with us from

the first establishment of our Library, and so thoroughly identified with it and its progress as to have become, as it were, part and parcel of it. Our regrets, however, are lessened by the knowledge we have that she has gone to build up and establish, in another State, a free public library, that will, we trust, prove in its usefulness the equal of the one she has left in Newton.

Respectfully submitted by the Board of Trustees,

JOHN S. FARLOW, *President.*

SUPERINTENDENT'S REPORT.

TO THE BOARD OF TRUSTEES OF THE NEWTON FREE LIBRARY.

Gentlemen, — The tabulated statistics at the close of this report present in detail the work and expenses of the Library for the year 1887, and afford an opportunity for comparison with the two previous years. The columns for 1887 present, in reality, only a statement for nine months; as, for three months of the year, and these the most fruitful in results among our readers, the Library was closed to admit of the interior work upon the building incident to the large addition to the edifice, and to the replacement of the books. Yet with this loss of a quarter of the year, such has been the greatly renewed interest in the Library that we have circulated over 70,000 volumes in this period, to 90,000 during the whole of the previous year. In some of the later months the circulation has been increased more than a thousand volumes over the same months in 1886.

The expenses occasioned by the additions and changes in refitting the halls, in addition to those included in the builder's contract, diminished very considerably the amount of our yearly appropriation, which would have been devoted to the purchase of new books. We have added this year some thirteen hundred volumes, to over seventeen hundred in 1886. These fresh accessions have been divided among the different departments in the following manner : —

Juvenile reading and prose fiction	268
Essays and poetry	118
Bound periodicals	77
Foreign literature	2
Geography and travels	77
Biography	114
History	121
Natural science and industrial art	103
Political and social science	50
Theology	40
Reference library	357
	<hr/>
	1,327

The whole number of books in the Library is now 26,411.

A very commendable effort has been made by the Newton Centre Associates to afford the best facilities for the use of the Library to the citizens and families of that ward. A fine reading room has been provided with some of the most useful books of reference for the school pupils and others, with the presence of a lady to receive and return our books, and to aid in the use of the catalogues and bulletins.

The facilities offered in this ward have greatly enlarged the circulation of books in its district.

The delay and deprivation of its use to our citizens for three months were found to be amply compensated by the convenient changes and large additions which had been made by the city for the accommodation of the different departments of the Library. The first view as the visitor enters Edmands Hall is very attractive, occasioning continual complimentary remarks from the many strangers who have examined the Library. Every portion is light and well ventilated. The

arrangement for the reception and delivery of books could hardly be more convenient. The Farlow Reference Room, with its chaste and beautiful appointments, its encyclopædias, dictionaries, and works of art, offers a very inviting retreat for the student or reader. The reading room and the magazine room, with their generous spaces, their abundant light and pure air, are fully appreciated by our patrons. Large numbers, especially during the afternoons and evenings, improve the opportunity they afford. For a period, the small boy, in a multiplied form and with characteristic uneasiness, gave us a little trouble in securing the necessary silence. Upon application, however, by the trustees to the Mayor and City Council, our janitor was appointed a special police officer, and the added authority thus bestowed has been found ample to secure the indispensable respect for our rules.

Of the whole building thus enlarged and improved, Mr. Larned of the Buffalo Library, in an interesting paper read at the late meeting of the Librarians' Association at the Thousand Islands, said, "The Library rooms are strikingly beautiful, and the convenience of the working arrangements of the Library is unsurpassed. The book room, the delivery room, the newspaper room, the document room, and the librarian's room are all reported to be of liberal dimensions, well-lighted, and handsomely finished." Much credit is due the architect, Mr. Kenway, for his skill and good taste; but much more is due to the wisdom and practical experience of the late accomplished librarian, Miss Hannah P. James, whose suggestions formed the basis of the plan so admirably executed.

Three hundred persons found themselves comfortably seated in Chaffin Hall on the evening of the historical 17th of June, at the opening of the enlarged accommodations.

The exercises, under the chairmanship of the President of the Board of Trustees, in the presence of his Honor the Mayor and three of the ex-mayors of the city, the City Council, school officers, donors to the funds of the Library, and many invited guests, were of a very interesting character. The addresses of the occasion were both historical and congratulatory, and, as fully reported by the local press, gave to our citizens a grateful record of the noble gifts of honored men, living and departed, and of the very rapid progress and excellent educational work which the Library has already accomplished. The term "Public Library," fails to give full expression to the character of the Newton Library and the many institutions of the same description which have been lately established in our cities and chief towns. The distinguishing term is the "FREE Library." Until as late as 1852 the Public Library was simply a reference library,—its books to be used upon its premises, or by its proprietors. The Boston Library in that year started the great and successful experiment which is now being tried in all portions of the land. The grand idea of it seemed to have originated with Mr. George Ticknor, a leading founder of that institution, himself a student and collector of books. It was the more remarkable that this truly democratic and somewhat delicate experiment should have had such an origin. Edward Everett, a coadjutor with him in the undertaking, hesitated to open with such unlimited freedom a valuable collection of books. There was a natural fear that such a broad indulgence as to the use of the books might expose them to great injury and to serious losses. Mr. Everett's hesitation was soon removed by the results of the experiment. It was demonstrated

at an early day, as it has been repeatedly confirmed since in other libraries, that there is little loss, except by the honest wear of the users; that fines for defacement are readily paid, as, also, for lost books; and that a surprisingly small number annually disappears without being properly accounted for and replaced. It has been also demonstrated (for this was another occasion of anxiety among the thoughtful men who instituted the experiment of the free library) that the opportunity to enjoy almost unlimited fiction would not lead to the serious abuses some expected. This anxiety was natural, for almost the sole support of large circulating libraries was found in the demand for novels. In the experiment of the free library, with its large collection of interesting works of a substantial character, it has been found that a better taste was created in the community, and a demand for a higher standard of literature.

The growth of this more wholesome taste in our city has been effectively advanced by the formal connection of the Library with the public school system, the securing the hearty concurrence and assistance of the teachers, and the provision of an adequate supply of illustrative volumes upon the subjects taught in the schools. This has both changed the character of the private reading, and awakened a taste for instructive works in the homes of the scholars. The older pupils have subjects given to them requiring the examination of many volumes of reference. It is one of the most familiar sights in the reference room to see these pupils at the tables, behind piles of books, busily engaged in taking notes. The formation of clubs, literary and scientific, in all portions of the city, has created the habit of entering upon courses of

reading ; such works as Sir John Lubbock's, and others who have succeeded him in the same field, giving lists of a hundred volumes of special value, and scores of personal experiences as to the books which have been peculiarly helpful, have given new directions to the reading of our patrons. Classes in literature and in history are established in different wards in the city, which make constant use of our facilities. An interesting winter's literary work at the Highlands has been devoted to the reading of descriptive volumes, historical events, and incidents connected with the countries, cities, and towns, of which one would desire to know something if he were expecting to take a European trip.

A club in Newtonville arranged a most elaborate schedule of historical work, through an indefatigable secretary, entitled, "A Winter in America." This covered the discovery of the country, its early history, the government, the struggle with slavery, the literature, tariff, the church, social problems, natural resources, the Revolutionary and the civil wars, and the local histories of Newton and Boston. Certainly this is a pretty broad field of study for one winter, but it was divided among many members. The titles of books of reference given in the published schedule reached over two hundred, some of them requiring new purchases to meet the demands upon our shelves. This is some of the most important work of the Library. In meeting such calls upon its resources we justify the title that is beginning to be applied to it of the "People's University." It is readily seen, especially in such a community as ours, what intellectual inspiration, as well as provision, such an institution must become. The public school is the educator of the children: the free library of every person in the community. In its various

departments of mechanical science, literature, and the arts, many a young mind will receive the effective touch that will awaken the new inventive or artistic genius for which the world is waiting. These demands of which we have spoken indicate the direction in which our outlays for books, beyond the current literature of the hour, must be made. All these departments — scientific, historic, literary, and artistic — must be gradually filled to meet the requisitions of the growing scholarship in the community around us.

During the year in the Art Department the most valuable addition has been the four large, sumptuous volumes of illustrations of the English cathedrals, arranged in accordance with the eras which gave them birth and the style of their architecture. The photographs were collected by Miss James during her late visit to England and neatly mounted, and under her supervision — aided by Gen. A. Hun Berry, Miss L. P. Merritt, Miss Evelyn Purdie, and Mr. Robert Lewis — have been provided with elegantly illuminated titles and appropriate ornamentations. By an act of considerate courtesy, the several bishops forwarded their autographs, giving additional interest to the unique work. The volumes have been substantially and handsomely bound by Mr. McNamee of Cambridge. The work has hardly a parallel in the country in the beauty of its mechanical execution. We have also added two large royal octavo volumes of artists' proof copies of the leading French water-color painters, with a full descriptive letterpress. While visiting Rome, Mr. Charles F. Farlow secured for us about five hundred photographs of the works of art and classic remains gathered in the galleries of that city. These have been mounted, and form an interesting and instructive collection.

We have received valuable gifts of books during the year. Among them is a series of the publications of the French Patent Office, presented by Mr. Edward Sawyer. A large number of very useful congressional volumes have been sent to us by Senator George F. Hoar, with contributions from the Chief Signal Officer, Gen. A. W. Greely. We have also been placed under obligations for public documents by Hon. F. D. Ely, Hon. John W. Candler, Hon. Carroll D. Wright, and Hon. Henry B. Peirce. Excellent single additions have been made to the Library by Rev. Dr. I. N. Tarbox, Gen. A. B. Underwood, F. M. Johnson, and Mrs. Warren P. Tyler.

A new bulletin, containing the accessions for two years, will be prepared and issued during the coming spring. Every week, through the courtesy of the publishers of our local papers, a list of new books added to our shelves has been issued, with short descriptive notices of their contents.

The only change made in the Library corps during the year has been the temporary one occasioned by the much-regretted resignation of Miss James, the Superintendent assuming a portion of her duties. The experienced assistants remain as heretofore. The first assistant, Miss Elizabeth P. Thurston, has had a greatly increased responsibility since the re-opening of the Library, and has met all the requisitions upon her services with marked success. A cataloguer of rare ability, by the large amount of this work which she has done for the Library, she has become thoroughly acquainted with its contents, and is a quick and intelligent interpreter of its resources.

In closing my report, permit me to congratulate the trustees upon the remarkable growth of the institution committed to their care, the confidence and patronage it receives from the

community, the noble edifice with its ample halls which has now been provided for its valuable contents, and upon its general prosperity.

Respectfully submitted,

BRADFORD K. PEIRCE,
Superintendent.

APPENDIX.

A.

RECEIPTS.	1887.	1886.	1885.
December 31.			
Municipal appropriation	\$8,500 00	\$8,500 00	\$7,500 00
Fines, bulletins, etc.	277 79	426 63	348 64
Cash on hand at last report	1 22	1 53	38
	\$8,779 01	\$8,928 16	\$7,849 02

B.

EXPENDITURES.	1887.	1886.	1885.
December 31.			
Salaries	\$3,636 42	\$3,755 07	\$3,333 33
Reading room	456 85	337 74	400 46
Incidentals	241 10	279 83	247 13
Repairs	160 36	45 35	41 96
Furniture and fixtures	845 66	—	61 75
Printing bulletins	—	300 00	—
Printing and advertising	87 35	141 50	129 37
Binding	141 42	276 20	127 55
Books	972 58	1,805 69	1,490 81
Light	543 60	542 71	523 81
Fuel	305 79	143 43	241 22
Distributing agencies and express . .	1,193 95	1,169 00	1,204 25
Blanks and stationery	172 60	97 89	32 06
Postage account	20 77	32 50	13 77
Total expenditure	\$8,778 45	\$8,926 91	\$7,847 47
Bal. with City Treasurer . . \$0 00			
at the Library 56			
Total balance	56	1 25	1 55
	\$8,779 01	\$8,928 16	\$7,849 02

C.

CIRCULATION.	1887.	1886.	1885.
Number of days the Library was open	230	306	306
of holidays the Library was closed.	8	7	7
of other week-days the Library was closed for alterations	75	—	—
of volumes delivered for home use	70,005	90,213	83,938
Average daily use	304.3	294.8	274.3
Largest daily use, November 26, 1887,	526	—	—
January 30, 1886	—	636	—
March 14, 1885	—	—	541
Smallest daily use, July 1, 1887	128	—	—
August 11, 1886	—	164	—
August 8, 1885	—	—	71
Number of books lost and not paid for,	10	13	7
of books lost and paid for	5	2	1
of books worn out and withdrawn	24	105	114
of notices to delinquents	649	636	424
of volumes covered	13,954	12,263	10,829
of volumes bound	318	397	237
of names registered during the year	1,485	1,790	3,834
Total number of names registered	6,722	5,237	3,447*

* A new registry was commenced June 8, 1885.

D.

DISTRIBUTION THROUGH THE AGENCIES AND TO THE SCHOOLS.		1887.
Books distributed at Newton Centre		8,807
Newtonville		7,607
Auburndale		5,511
Newton Highlands		5,388
West Newton		3,619
Newton Upper Falls		3,038
Newton Lower Falls		2,081
Oak Hill		739
Nonantum		389
Total agency distribution		37,179
Books delivered to 17 of the 20 Public Schools.		
to Claflin School		381
High		339
Bigelow		309
Prospect		300
Franklin		247
Pierce		241
Mason		214
Underwood		212
Lincoln		142
Adams		136
Oak Hill		121
Jackson		110
Williams		90
Davis		80
Rice		80
Eliot		22
Hyde		21
Total number of books delivered for school use		3,045

E.

ACCESSIONS.	1887.	1886.	1885.
Increase by purchase	971	1,598	1,240
by gift	300	183	220
by binding pamphlets	4	4	-
by binding periodicals	91	110	116
Number of missing volumes restored since last report	-	-	-
Total accessions for the year	1,366	1,895	1,576
Number of volumes missing or withdrawn since last report	39	120	122
Actual increase	1,327	1,775	1,454
Number of volumes in the Library, as last reported	25,084	23,309	21,855
Total number of volumes in the Library	26,411	25,084	23,309
Number of pamphlets bound since last report	20	24	-
Number of newspapers subscribed for	31	30	39
of newspapers given	15	14	4
of magazines subscribed for	60	60	54
of magazines given	16	10	7
Total number received	122	114	104

F.

CLASSIFICATION, GROWTH, SIZE, AND USE.	INCREASE DURING THE YEAR.	TOTAL NUMBER OF VOLUMES.	VOLUMES ISSUED DURING THE YEAR.	PER CENT OF CIRCULATION.		
				1887.	1886.	1885.
<i>Literature.</i>						
Prose fiction and juvenile read- ing	268	5,782	45,234	64.62	65.96	67.4
Essays, poetry, and drama . .	118	3,183	4,748	6.78	7.27	6.88
Periodicals	77	1,828	1,454	2.08	1.8	2.03
Foreign literature	2	526	230	.33	.33	.34
<i>History.</i>						
Geography and travels	77	2,374	5,817	8.31	8.02	7.14
Biography	114	2,457	3,104	4.43	3.97	3.82
History	121	2,435	3,384	4.83	5.03	4.78
<i>Arts and Sciences.</i>						
Natural science and industrial arts	103	2,544	4,678	6.69	5.92	5.86
Political and social science . .	50	1,338	803	1.15	.88	.69
Theology	40	1,145	487	.69	.61	.83
Reference Library	357	2,799	66	.09	.21	.23
Accessions for the year . . .	1,327	-	-	-	-	-
Number of volumes in the Library	-	26,411	-	-	-	-
Circulation for nine months of the year	-	-	70,005	-	-	-

G.

Received for catalogues sold in 1887 \$26 00
 Paid City Treasurer \$26 00

LIST OF PERIODICALS FOR 1888 IN THE READING ROOM.

MAGAZINES.

American Agriculturist.	Lend a Hand.
American Architect.	Library Journal.
American Magazine.	Life.
Andover Review.	Lippincott's Magazine.
Appalachia.	Literary News.
Art Amateur.	Literary World.
Atlantic Monthly.	Littell's Living Age.
Bibliotheca Sacra.	London Punch.
Blackwood's Magazine.	London Quarterly.
Cassell's Family Magazine.	Magazine of American History.
Catholic World.	Magazine of Art.
Century.	Magazine of Western History.
Chautauqua.	Nation.
Common School Education.	Nature.
Contemporary Review.	New Eng. Hist. and Gen. Reg.
Country Gentleman.	New Eng. Jour. of Education.
Critic.	New Englander and Yale Review.
Decorator and Furnisher.	Nineteenth Century.
Edinburgh Review.	North American Review.
Education.	Notes and Queries.
Engineering and Building Record.	Outing.
English Illustrated Magazine.	Overland.
Fortnightly.	Philatelic Journal.
Forum.	Popular Science Monthly.
Gardener's Chronicle.	Princeton Review.
Harper's Magazine.	Publisher's Weekly.
Haus und Herd.	Quarterly Jour. of Economics.
Illustrated London News.	St. Nicholas.
Journal of Franklin Institute.	Sanitarian.

Science.
 Scientific American.
 Scientific American Supplement.
 Scribner's Magazine.

Westminster Review.
 Wide Awake.
 Youth's Companion.

NEWSPAPERS.

Alta California.
 American, The
 Baltimore American.
 Boston Advertiser.
 Boston Commercial Bulletin.
 Boston Globe.
 Boston Herald.
 Boston Journal.
 Boston Post.
 Boston Transcript.
 Boston Traveller.*
 Chicago Tribune.
 Christian Register.*
 Christian Union.
 Cincinnati Commercial.
 Harper's Bazar.
 Harper's Weekly.
 Independent.

London Times.
 Montreal Gazette.
 New Orleans Picayune.
 New York Evening Post.
 New York Herald.
 New York Sun.
 New York Tribune.
 New York World.
 Newton Graphic.
 Newton Journal.
 Philadelphia Press.
 St. Louis Globe Democrat.
 Saturday Evening Gazette.
 Springfield Republican.
 Washington Evening Star.
 Woman's Journal.*
 Zion's Herald.*

* Represents newspapers given.



City of Newton.

ANNUAL REPORT

OF THE

OVERSEERS OF THE POOR

FOR THE

YEAR ENDING DECEMBER 31, 1887.



BOSTON :

RAND AVERY COMPANY, PRINTERS.

1888.

At the regular meeting of the Board of Overseers of the Poor, held this day, the Annual Report for 1887 was accepted by the Board, and the Clerk was instructed to present the same to the City Council.

NATHAN MOSMAN, *Clerk*.

WEST NEWTON, Feb. 2, 1888.

BOARD OF OVERSEERS OF THE POOR, 1887.

HIS HONOR J. WESLEY KIMBALL, *Chairman, ex-officio.*

Ward One.

EDWIN O. CHILDS.

Ward Two.

EDWARD S. COLTON.

Ward Three.

GEORGE E. ALLEN.

Ward Four.

NATHAN MOSMAN.

Ward Five.

HOSEA C. HOYT.

Ward Six.

GEORGE WARREN.

Ward Seven.

JOHN WARNER.

COMMITTEE ON ALMSHOUSE.

JOHN WARNER.

HOSEA C. HOYT.

NATHAN MOSMAN.

CITY ALMONER, AND CLERK OF THE BOARD.

NATHAN MOSMAN.

WARDEN OF ALMSHOUSE.

NATHANIEL D. MOODY.

MATRON OF ALMSHOUSE.

Mrs. ELIZA A. MOODY.

City Almshouse, Beacon Street.

REPORT OF THE OVERSEERS OF THE POOR.

TO HIS HONOR THE MAYOR, AND CITY COUNCIL OF NEWTON.

IN accordance with the provisions of the city ordinances, the Board of Overseers of the Poor present their annual report for the year ending Dec. 31, 1887.

The ancient saying, "The poor ye have always with you," being apparently established by existing facts, the more modern one, "What are you going to do about it?" is filling the minds of those set to the solution of the conundrum. In this, appearances would sometimes seem to indicate that little more was done than to keep the question from getting the better of the disputants.

Overseers of the poor everywhere are laboring to find the line on which work ought to be done, and there is a substantial agreement among them in these matters; at the same time they quite disagree with many who ask for aid, and with not a few citizens of large sympathies for the unfortunate but necessarily limited knowledge of the workings and results of given plans of action. Newton, being one of the smaller cities in population, is able to carry these interests thus far without serious friction in administration. It is believed that the needy unfortunate are properly provided for, and that those having charge of the work share the confidence of the community.

The present economical management of the affairs of the department has been secured by the attention given by His Honor the Mayor and the members of the Board to its regular meetings and business. The appropriations for the department have remained substantially the same for several years. In some cases the account has been slightly over-drawn, in others a balance has remained in its favor.

The question of out-door relief is at present receiving unusual attention, and in some important instances it has been wholly discontinued. Where this action has been taken, the expected result of over-crowded almshouses and over-burdened charitable societies has not appeared. Some other way out of the difficulty was evidently found by those whose supplies were thus cut off.

The use of intoxicating liquors is still, more or less directly, a great cause of pauperism. But for this, the occupation of overseers of the poor would to a great extent be gone. The attendant expense is not the most serious evil in the case. More important than this is the fact that by this cause many children are deprived of good homes, and almost necessarily follow in the wake of their parents to lives of pauperism if not of crime. The question is yet unanswered, whether such children should not be gathered in a home provided at public expense for their support and proper education. The law very properly does not permit their detention in almshouses. As it is, they are robbed in childhood of their birthright to a true character with which to meet the emergencies of life.

The prosperous condition of business has permitted those willing and physically able to maintain themselves, to do so. This has also brought into the city a larger number than

usual of young men and women for business purposes. Many of these have no homes other than boarding-houses or families where employed. Accident or sickness has made it necessary for a considerable number of these to seek aid from the city. In cases where removal was necessary, this aid has been given at the Newton Cottage Hospital. The expenses of the Board have thus been increased, while at the same time it has been able to render such assistance as it could not but for the hospital have given. The hospital has been doing a most efficient, humane, and beneficent work, in the advantages of which this department has shared.

The number of persons applying for and receiving aid has been somewhat larger than last year. But for constant vigilance it would be still greater. It is the intention to give relief to every destitute person in the city who is not able to secure it by his own diligent, self-respecting efforts.

The cost by population of maintaining the poor in 16 cities of the State in 1886 varies from \$1.42 down to \$.46; Newton standing at \$.62 in the list, being the fourth from the lowest.

The whole number of families out of the almshouse receiving partial support during any part of the year was 170. The whole number of persons, 434. Of these there were, males, 191; females, 243; under 16 years of age, 196; having settlement in Newton, 260; having settlement in other cities and towns in the State, 49; having no settlement, 125.

Persons wholly supported out of almshouse during any part of the year are as follows:—

State Industrial School, Lancaster	.	.	.	.	1
Northampton Lunatic Hospital	.	.	.	.	1
Danvers Lunatic Hospital	.	.	.	.	1

Worcester Insane Asylum	2
Worcester Lunatic Hospital	7
Remaining at present in insane hospitals	9

The expense of feeding tramps and travellers, which in 1879 reached \$200, has steadily decreased until 1887, when it was \$19.61. The whole number of persons was 910.

The amount* appropriated by the City Council for

poor out of almshouse	\$8,000 00
Balance of almshouse appropriation transferred	147 67
	<hr/>
	\$8,147 67

The amount expended was as follows : —

Cash payments	\$213 15
Groceries	2,073 37
Fuel	1,117 18
Clothing	39 15
Board	935 10
Medical attendance	239 97
Medicine	10 05
Burials	81 25
Feeding tramps and travellers	19 61
Support of insane	1,537 05
Paid other cities and towns	723 89
Commonwealth of Massachusetts	229 64
Salary of clerk and almoner	700 00
Salaries of overseers	350 00
	<hr/>
Total expenditures	\$8,269 41
Poor Department over-drawn	121 74
Receipts from the State, other cities and towns, and friends of the relieved	1,338 90
	<hr/>
Net cost of poor out of almshouse	\$6,930 51

ALMSHOUSE DEPARTMENT.

The year in the almshouse department may be considered a prosperous one. The number of inmates, which for two or three years has been below the average, has slightly increased with an increase of expense. The receipts have materially advanced beyond last year, although they were then large. The farm is of such a character that good treatment and constant fertilization are required to produce good results. It has had good management, and its condition is kept up by the manure from all the city stables, purchased from the highway department, and utilized here with apparently paying returns. Standing wood has been purchased, brought to the almshouse, sawed and split in the winter, and sold to all who order, with increased receipts.

The almshouse and outbuildings are in all respects comfortable. But little is being expended in permanent repairs until the future of Waban and the almshouse takes more definite and settled form. The inmates have enjoyed as good a degree of health as would have been looked for anywhere among an equal number of equal age. The whole number who have received aid for any part of the year is six in advance of last year. Three have died, one of whom has been confidently believed to be more than one hundred years of age.

The services of the Matron, now many years continued, are valuable and appreciated by the Board. The Warden has performed faithful and efficient service in the interests intrusted to him, and the Board takes pleasure in commending the satisfactory manner in which the affairs of this department have been managed.

It is the custom at the almshouse to give to the inmates occasional recreation as is practicable; such as a picnic party in the woods in summer for those able to go out, a celebration of the Fourth of July at the house, and a Christmas celebration, making life as homelike as possible to those whose only home is here.

The number of persons who have been supported at the almshouse for all or any part of the year is 40; average number for the year, 28; present number, 26; died during the year, 3.

The amount appropriated by the City Council

for almshouse expense and repairs . . .	\$1,000 00
Whole amount expended	3,852 33
Balance transferred to poor out of almshouse . .	147 67
Amount received from sale of produce, wood, board, etc.	2,604 03
Almshouse expense and repairs (net) . . .	1,248 30
Expense for each person in almshouse per month (net)	3 715

With such provision as the city has made at the almshouse for the comfort of those who have occasion to make it a home, it is worthy of consideration whether more of those seeking aid should not receive it at this place.

The Board desires to express its pleasure at the uniform interest and courtesy of His Honor the Mayor, in the business of the Board during the year.

Respectfully submitted,

For the Overseers of the Poor,

NATHAN MOSMAN, *Clerk.*

City of Newton.

REPORT

OF

THE BOARD OF HEALTH

For the Year ending December 31, 1887.



BOSTON :

RAND AVERY COMPANY, PRINTERS.

1888.

BOARD OF HEALTH OF THE CITY OF NEWTON,
1887.

THE MAYOR, *ex-officio*.

PRESIDENT.

Alderman B. S. GRANT.

Councilman HEMAN M. BURR.

JESSE F. FRISBIE, M D.

J. FRANKLIN FULLER.

OTIS PETTEE.

CLERK.

ISAAC F. KINGSBURY.

AGENT OF BOARD.

NATHAN MOSMAN.

AGENT FOR INSPECTION OF PLUMBING.

ALBERT F. NOYES.

MEETINGS : First and third Tuesdays in each month, 4.20 P.M.

REPORT OF THE BOARD OF HEALTH.

CITY HALL, WEST NEWTON, Feb. 14, 1888.

TO HIS HONOR THE MAYOR, AND THE CITY COUNCIL.

“The statutes impose upon boards of health the duty of protecting the people from those causes and influences which may injuriously affect their health.” — *Manual of the State Board of Health*.

THE Board has had an active year in its work, without matters of special interest or importance.

The work of the agent has been continued on the usual basis, the Board making visits and inspections whenever his reports showed such visits to be necessary.

The efforts toward making Newton a clean city have met with a fair degree of success. The desired results have been accomplished only by continued effort in weeding from the thickly settled sections such things as, though tolerated in the past, are now cause of discomfort and constant complaint by citizens suffering from their presence. In the process of securing conditions of comfort and safety for the many, the Board has sometimes come in contact with individuals whose convenience has been temporarily disturbed thereby.

The continued action of the Board in relation to the keeping of swine in open pens has resulted in their removal from thickly settled sections.

Cows in large numbers are still kept in some localities where they prevent clean and desirable surroundings. These are a constant menace to the comfort and health of their immediate neighbors, and will cause discontent so long as permitted to remain.

The disposition of sewage and night-soil, in a manner not to cause complaint, has been a difficult matter for the Board to adjust. Progress has been made, and it is hoped that this in the future may be managed satisfactorily to all concerned.

The attention given to privy-vaults and cesspools by proprietors is far from what it should be. A privy-vault properly constructed, kept dry, and disinfected with dry earth, need be no more objectionable than the house-offal tub, stable, or dog-kennel. The sanitary condition of the city might be greatly improved by a more general and thorough use of the odorless excavators.

The privilege of dumping ashes and other material in low lands has in some cases been abused by adding decaying and filthy material to such an extent as to cause a nuisance and become a source of danger. Properly used, it is a convenience and an improvement to the locality.

The work in relation to dwellings concentrates largely on cheap tenements. These comprise the modern small house built for renting, and the larger houses of the past which have deteriorated into the cheap grade of tenements. The systematic inspection and care necessary to keep these places in an approximately safe condition involves a large amount of labor. Sufficient time and attention can make a great improvement in this direction.

The experience of the Board has given prominence to the

necessity of a house or ward connected with the Newton Cottage Hospital or with the almshouse for the treatment of contagious diseases other than small-pox. In many cases there is no opportunity for adequate isolation in the house where disease has appeared, and almost of necessity it spreads through the family. This state of things exists especially in the small tenements.

Among contagious diseases scarlet-fever has been more than usually prevalent, but in a mild form, one hundred and eight cases being reported, with fatal termination to but one. The total reported of the three — scarlet-fever, diphtheria, and typhoid fever — is one hundred and fifty-five.

Malaria appeared in various parts of the city during the summer, and in some cases with severity. The disease was not confined to any locality, but appeared in different, widely separated sections of the city, and where local conditions were the same as for past years. The climatic conditions in the summer of 1887 were unusual. The month of July was of an uncommonly high temperature; August of a low temperature with frequent rain-fall, not large in amount, but distributed through the month, keeping the earth constantly moist, and accompanied by a great growth of vegetation. Malaria continued into the autumn, and gradually passed away.

Summary of nuisances and sources of disease where action has been taken : —

Cellar filthy	2
Catch-basin foul	3
Cesspool defective	13
Cesspool rebuilt	2
Cesspool new	10

Cesspool overflowing	34
Drain defective or broken	23
Drain emptying into street gutter, or brook	9
Drain emptying on surface of land	6
Fish-market offensive	2
Goat in cellar	1
Hennery offensive	1
Manure exposed and offensive	17
Offal on land	6
Offensive odors in house	21
Offensive dumping ground	2
Premises filthy	18
Privy-vault defective	16
Privy-vault removed	3
Privy-vault cleansed	50
Sewage in cellar	7
Sewage on land and not covered	19
Sink-pipe not trapped	19
Stables removed	1
Stables offensive	6
Stagnant water in stable cellar	1
Stagnant water on surface of land	3
Vaults and cesspools cleansed by contractor	961
Vault poorly ventilated	3
Wells polluted and closed	3
Water in cellar	2

REPORTED CASES OF DISEASE DANGEROUS TO PUBLIC
HEALTH.

DISEASES REPORTED.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.	Fatal.
Typhoid fever . . . .	..	2	..	..	2	..	1	1	6	4	3	1	20	8
Diphtheria	5	1	2	2	4	2	..	..	..	3	3	5	27	4
Scarlet fever	3	3	9	19	8	6	3	4	3	6	25	19	108	1

The following statement has appeared in the American public prints: "In our cities and towns the mortuary returns show a death-rate 20 to 25 per cent higher than in the large cities and towns of England." Official reports give the following statistics in opposition to this statement.

Mortality rate per 1,000 of population for Europe for 19 years to 1883	28.1
Mortality rate per 1,000 of population for England for 48 years to 1885	21.8
Mortality rate per 1,000 of population for 28 great towns of England and Wales for 1887	20.9
Mortality rate per 1,000 of population for Massa- chusetts for 36 years to 1887	19.40
Mortality rate per 1,000 of population for Massa- chusetts for year 1886	18.8
Mortality rate per 1,000 of population for Middlesex County for year 1886	17.9
Mortality rate per 1,000 of population for 23 cities of the Commonwealth for 1887:—	
Boston	23.40
Worcester	16.99

Lowell	22.72
Cambridge	18.37
Fall River	21.52
Lynn	16.19
Lawrence	19.42
New Bedford	16.68
Somerville	15.86
Salem	20.79
Springfield	18.51
Holyoke	18.83
Chelsea	18.86
Taunton	18.55
Gloucester	19.92
Haverhill	21.08
Brockton	14.09
Fitchburg	16.50
Newburyport	17.81
Northampton	18.93
Waltham	12.69
Malden	16.52
Newton	12.42

The census of 1885 is used, with estimated increase in calculating mortality rates for 1887.

With the sanitary condition of the city far from perfect, and being still without sewers, Newton shows the lowest mortality rate that can be gleaned from the public reports.

Respectfully submitted,

For the Board.

NATHAN MOSMAN, *Agent*.

Deaths Registered by the City Clerk in 1887.

STATEMENT SHOWING CAUSES OF DEATH IN EACH MONTH.

DISEASES.	JANUARY.	FEBRUARY.	MARCH.	APRIL.	MAY.	JUNE.	JULY.	AUGUST.	SEPTEMBER.	OCTOBER.	NOVEMBER.	DECEMBER.	TOTAL.
Abcess, perityphlitic	1	..	..	..	..	1
Accident of birth	1	..	..	..	..	..	..	..	..	..	1
Accident, railroad	1	..	..	..	..	2	3	1	7
Alcoholism	1	..	..	..	..	..	..	1
Anæmia	1	..	..	..	..	..	..	1	1	3
Aneurism	1	..	..	..	..	..	..	..	1
Apoplexy	1	..	1	1	1	1	..	1	2	..	2	1	11
Asphyxia	1	..	..	..	..	..	..	1
Asthemia	1	..	..	..	..	..	..	1
Birth, premature	2	..	..	1	..	1	..	..	2	..	6
Bladder, catarrh of	1	..	..	..	..	..	..	..	..	..	1
Bowel, congenital defect in	1	..	..	..	..	..	..	..	..	..	..	1
Bowels, hemorrhage	1	..	..	..	..	..	..	..	..	1	2
Bowels, inflammation	1	..	..	..	1
Brain disease	1	..	..	..	..	1
Brain, softening of	1	1
Breast, cancer of	1	..	..	..	..	..	1
Bronchitis	1	3	1	1	3	1	1	1	1	..	..	13
Carcinoma	2	..	..	..	..	..	..	..	..	2
Catarrh, gastro-intestinal	3	..	..	..	..	..	3
Cholera infantum	5	7	1	1	..	..	..	14
Cholera morbus	1	..	..	..	..	..	..	1
Consumption	1	..	3	2	3	3	2	1	4	3	3	3	28
Convulsions	1	..	1	3	1	..	..	1	..	..	..	..	7
Croup	1	..	..	..	..	..	..	1	..	..	..	..	2
Cyanosis	1	..	..	..	..	..	1	..	..	..	..	..	2
Cystitis	1	..	..	1	..	..	1	..	..	..	3
Debility	1	..	..	..	..	1	2	1	5
Diabetes	1	..	..	1	..	2
Diarrhœa	1	..	..	..	..	..	1
Diphtheria	1	..	..	1	..	..	..	..	..	..	2	4
Drowning	1	..	1	..	..	..	..	3
Dysentery	2	3	1	1	..	7
Dysentery, typhoid	1	1
Eclampsia	1	..	..	..	..	1
Endocarditis	1	..	..	..	..	1	..	..	..	..	2
Epistaxis	1	..	..	..	..	..	..	..	..	..	..	..	1
Erysipelas	3	..	..	..	..	..	..	..	..	..	..	..	3
Exhaustion	1	..	..	..	..	..	..	..	..	..	1
Femur, compound fracture of,	1	..	..	..	..	..	..	..	..	..	..	..	1
Fever, intermittent	1	..	..	1
Fever, parasitic	1	1
Fever, pneumatic	1	1
Fever, scarlet	1	1
Fever, typhoid	1	1	..	..	..	1	..	3	1	..	..	7
Fever, typhoid malarial	1	..	..	..	..	..	..	..	1
Gangrene	1	..	..	..	..	..	..	..	1
Gastritis	1	..	..	..	..	..	..	..	..	..	..	1
Gastro enteritis	1	..	..	..	..	..	1
Heart, asthma of	1	..	..	..	..	..	..	..	..	..	1
Heart disease	1	1	4	2	1	2	1	1	3	1	4	1	22
Heart, neuralgia of	1	..	1	..	..	..	..	..	..	..	2
Heart, paralysis of	1	..	..	1	..	1	..	..	..	..	3
Hemiplegia	1	..	..	1	..	..	..	..	..	..	..	2
Hemorrhage	1	..	..	1	1	..	..	..	1	..	..	..	4
Hepatitis, gastro	1	..	..	..	..	..	..	..	..	..	1
Hydrocephalus	1	..	..	..	..	..	..	1
Inanition	1	..	..	1	..	..	..	2

Deaths Registered by the City Clerk in 1887.

STATEMENT SHOWING CAUSES OF DEATH IN EACH MONTH—*Concluded.*


DISEASES.	JANUARY.	FEBRUARY.	MARCH.	APRIL.	MAY.	JUNE.	JULY.	AUGUST.	SEPTEMBER.	OCTOBER.	NOVEMBER.	DECEMBER.	TOTAL.
Infantile	1	..	..	..	..	..	..	..	1
Intestinal obstruction	1	1
Jaundice	1	..	..	..	..	1
Laryngitis, acute	1	..	..	..	..	..	..	..	..	1
Liver, cancer of	2	..	..	..	..	..	..	2
Liver, cirrhosis of	1	..	..	..	..	..	..	1	..	2	4
Liver, induration of	1	1
Liver, sclerosis of	1	..	1	..	..	..	..	1
Lung, empyema of	1	..	..	..	..	..	..	1
Marasmus	1	..	1	1	2	..	..	5
Measles	1	..	2	..	..	..	..	..	3
Meningitis	2	1	2	1	..	..	..	..	..	..	6
Nephritis	2	..	1	..	1	..	..	..	1	1	1	..	7
Never nourished	1	1
Old age	3	..	1	1	1	..	1	2	..	1	4	14
Omentum, cancer of	1	1
Paralysis	2	1	1	1	1	..	..	..	..	6
Pelvic bones, disease of	1	..	..	1
Peritonitis	1	1	1	3	..	1	1	..	..	..	1	9
Pleurisy	1	1	..	..	..	..	2
Pneumonia	1	2	5	..	4	1	..	1	1	3	2	1	21
Prostration from heat	1	..	..	..	..	1
Pyæmia, puerperal	1	..	..	..	..	..	..	..	..	..	1
Rifle-shot wound	1	..	..	..	..	..	1
Serofula	1	..	..	..	..	..	..	..	1
Splenitis	1	..	..	..	..	..	..	..	..	..	..	..	1
Stillborn	1	..	..	2	1	1	..	1	..	2	2	1	11
Stomach, cancer of	1	..	..	..	..	1	..	1	1	..	1	..	5
Stomach, disease of	1	..	..	..	..	..	..	..	..	1
Stomach, inflammation of	1	..	..	..	..	..	..	..	..	1
Strangulation	1	..	..	..	..	..	..	..	..	..	..	1
Suffocation	1	..	..	..	1
Sunstroke	1	..	..	..	..	..	1
Teething	1	1	..	..	..	..	..	..	..	..	..	..	2
Tuberculosis	1	..	..	1	..	..	..	..	2
Tumor, ovarian	1	..	..	..	..	..	..	1
Total deaths in each month,	19	15	36	23	32	30	25	34	27	23	28	29	321

ANNUAL REPORT
OF THE
SCHOOL COMMITTEE
OF
THE CITY OF NEWTON.

1887.

VOLUME XLVIII.



BOSTON
RAND AVERY COMPANY,  THE FRANKLIN PRESS,
117 FRANKLIN STREET.

THE UNIVERSITY OF CHICAGO

ANNUAL REPORT

OF THE

1901

OF THE



CHICAGO, ILL., 1901

ORGANIZATION OF THE SCHOOL COMMITTEE.

JANUARY, 1887.

HON. J. WESLEY KIMBALL, MAYOR, CHAIRMAN, *ex officio*.

LEWIS E. COFFIN, PRESIDENT COMMON COUNCIL, *ex officio*.

FISHER AMES, CHAIRMAN.

THOMAS EMERSON, SECRETARY AND SUPERINTENDENT.

ELECTIVE MEMBERS.	WARDS.	TERM OF OFFICE	
		EXPIRES.	
EDMUND W. CONVERSE	I. . .	January, 1889	
CHARLES H. STONE	I. . .	January, 1889	
JOHN W. DICKINSON	II. . .	January, 1889	
A. AMELIA SMEAD	II. . .	January, 1889	
FISHER AMES	III. . .	January, 1888	
GEORGE A. WALTON	III. . .	January, 1888	
WILLIAM S. SMITH	IV. . .	January, 1888	
ISAAC HAGAR	IV. . .	January, 1888	
WALTER C. FROST	V. . .	January, 1890	
ALBERT B. PUTNEY	V. . .	January, 1890	
CHARLES C. BARTON	VI. . .	January, 1890	
WILLIAM D. PHILBRICK	VI. . .	January, 1890	
GEORGE W. SHINN	VII. . .	January, 1890	
ALONZO S. WEED	VII. . .	January, 1888	

STANDING COMMITTEES.

HIGH SCHOOL.

FISHER AMES.	WILLIAM S. SMITH.
EDMUND W. CONVERSE.	ALBERT B. PUTNEY.
JOHN W. DICKINSON.	CHARLES C. BARTON.
GEORGE W. SHINN, AND MAYOR <i>ex officio</i> .	

WARD ONE.

EDMUND W. CONVERSE.	CHARLES H. STONE.
JOHN W. DICKINSON.	

WARD TWO.

JOHN W. DICKINSON.	A. AMELIA SMEAD.
GEORGE W. SHINN.	

WARD THREE.

FISHER AMES.	GEORGE A. WALTON.
ISAAC HAGAR.	

WARD FOUR.

ISAAC HAGAR.	WILLIAM S. SMITH.
FISHER AMES.	

WARD FIVE.

ALBERT B. PUTNEY.	WALTER C. FROST.
WILLIAM D. PHILBRICK.	

WARD SIX.

CHARLES C. BARTON.	WILLIAM D. PHILBRICK.
WALTER C. FROST.	

WARD SEVEN.

GEORGE W. SHINN. ALONZO S. WEED.
EDMUND W. CONVERSE.

EVENING SCHOOLS.

GEORGE W. SHINN. A. AMELIA SMEAD.
GEORGE A. WALTON.

DRAWING, MUSIC, AND SEWING.

A. AMELIA SMEAD. GEORGE W. SHINN.
ALBERT B. PUTNEY.

TEXT-BOOKS.

CHARLES C. BARTON. ALONZO S. WEED.
WILLIAM S. SMITH.

RULES AND REGULATIONS.

WILLIAM S. SMITH. GEORGE A. WALTON.
WALTER C. FROST.

SALARIES.

EDMUND W. CONVERSE. JOHN W. DICKINSON.
LEWIS E. COFFIN.

SCHOOLHOUSES.

CHARLES H. STONE. JOHN W. DICKINSON.
FISHER AMES.

ACCOUNTS.

ISAAC HAGAR. FISHER AMES.
GEORGE A. WALTON.

SUPPLIES.

ALONZO S. WEED. WILLIAM D. PHILBRICK.
EDMUND W. CONVERSE.

City of Newton.

IN BOARD OF SCHOOL COMMITTEE, Oct. 26, 1887.

The Chair appointed the following members as the committee to prepare the Annual Report: viz., Edmund W. Converse, John W. Dickinson, Walter C. Frost.

IN BOARD OF SCHOOL COMMITTEE, Dec. 28, 1887.

The Annual Report was presented by Mr. Frost, and adopted.

Ordered, That twenty-five hundred copies of the Annual Report be printed.

THOMAS EMERSON, *Secretary*.

REPORT OF SCHOOL COMMITTEE.

THE forty-eighth annual report of the School Committee is herewith submitted.

The schools of the city show a marked degree of efficiency and uniform excellence. It is the opinion of the Board, that they were never more thoroughly organized, nor better instructed and equipped for their proper work, than at the present time. This is not an accident. The wisely directed effort of able and disinterested school boards extending over a long period of years, constitute a chief factor in this result. Their labors have been made a pleasure by the evident satisfaction with which the people of the city viewed their work.

The Committee have always had their efforts supplemented by liberal appropriations, and, in the last few years, by intelligent supervision, through the employment of a superintendent. Many people of the city to-day believe that the outlay of money in support of schools is excessive, and that the employment of a superintendent is needless.

EXPENSE.

A careful examination of this subject must lead to the conclusion, that, in a city made up like ours; any common system of public work must necessarily be expensive; and your Com-

mittee believe that the public schools of Newton cannot maintain their present efficiency if any material reduction is made in the school appropriations. Either the present outlay is justified, or the plan upon which the schools are organized and conducted is wrong.

The superintendent has prepared from *data* at hand a table showing the annual expenses of our schools for ten years, and a statement showing how the city of Newton compares in this department of expenditure, with other cities and towns of the Commonwealth. We ask your careful attention to this report, which is appended.

SUPERINTENDENT OF SCHOOLS.

The statutes of the Commonwealth have made it the duty of the school committees to organize the schools, to provide the means of teaching, to select the teachers, to supervise their work and aid them in its performance, and to execute the laws relating to the attendance of the children.

From the nature and extent of the duties imposed upon the school committee, it will be seen that many of these duties cannot be efficiently and thoroughly performed except by those who have had a successful experience in teaching and in school management, and who are employed to devote their entire time to the work.

School boards, as generally constituted, have neither the faculty nor the time for the efficient performance of their duties. The employment, therefore, of special supervision, made intelligent by constant study and practice is a necessity, as well as in the interest of a true economy.

Our present superintendent has had the general charge of the schools of the city for the past three years. His faith-

fulness and skill as a superintendent of schools are shown in the changes he has brought about in our schools at large. Through his efforts the teaching-force has been improved in a most marked degree. This has been done by a careful and wise selection of teachers, by calling them together once each month for a mutual discussion of methods of teaching and topics of study, and by a skilful supervision of their daily work in the schoolroom. An inspection of the schools will show that they are now well supplied with the most approved means of teaching, and that they are instructed in accordance with natural methods.

Besides being a man of sound opinions and large experience in matters purely educational, the superintendent is a thorough and competent business man. We may esteem ourselves fortunate in having had his able and economical management, by which many thousands of dollars were saved to the city, at a time when the State Legislature made it incumbent upon the towns and cities of the State to furnish to the pupils all school-supplies, thus greatly swelling the incidental expense account.

The condition and care of the schoolhouses have been the objects of a constant supervision, by which the health and comfort of teachers and pupils have been greatly promoted. It is the duty of the Committee to order and distribute the text-books and supplies used in the schools. This has all been done through the agency of the superintendent, and in the most satisfactory manner.

A superintendent of schools is supposed to be a skilful agent, and therefore should be left to a free use of his skill. This is expected by the committee who elect him, and by the people who pay for his services. While Superintendent

Emerson has used his delegated powers in accordance with his own judgment of what is for the best interests of the schools, he has ever been ready to execute, in the most faithful manner, the expressed will of the Committee.

A generous co-operation on the part of the people always affords essential aid and encouragement to the school authorities, in promoting the vital interests committed to their care.

THE HIGH SCHOOL.

The high school of our system is required by law to be kept for the benefit of all the inhabitants in the towns where it may be established. Its object should be to furnish an opportunity for all who enter upon its courses of study to obtain a thorough English education, and for those who desire it to acquire the knowledge necessary for the higher institutions of learning.

The value of the high school in our Commonwealth cannot easily be over-estimated. It furnishes an opportunity for scientific study, and for obtaining a knowledge of those general truths from which the rules of conduct, in both private and social life, should be derived. It also provides the means for that training of the mind which prepares the young to take their places in life as intelligent, law-abiding citizens of a free State, ready to enter with facility upon any occupation which their tastes and capacities may lead them to choose. In the free high school all classes of children are trained together. A common pursuit, for common ends, has a tendency to destroy those artificial distinctions founded upon the accidents of birth or wealth, and to create that mutual sympathy and respect so necessary to the existence of the democratic spirit. These are most important results

for the educational institutions of a free State to accomplish.

The high school everywhere exerts a marked influence for good on all grades of instruction below it. This it does, by its requirements in entrance examinations, and by encouraging the children to perform their elementary work faithfully, in order that they may enjoy the advantages of scientific instruction. It is universally true, that primary instruction flourishes most where secondary instruction is free to all. For these reasons, it may be seen that the high school holds an important place in our system of public schools, and that its organization should be as perfect, and its work as efficient, as possible. To this end it should be nourished with all the care and intelligence which a thoughtful people can exercise.

For some years past the management and work of our own High School have been far from satisfactory to many members of the School Committee, and to many parents whose children have been among its pupils.

At the close of the school in June, 1886, a special committee was appointed to meet the teachers of the High School, and inform them frankly of the dissatisfaction existing, and to urge upon them the necessity of improvement. It was expected, or at least hoped, that by calling attention in this way to the condition of the school, as well as by individual criticisms made upon it from time to time, that there would be, early in the new year, a radical change for the better in its management.

It was found, on examination, that in some departments of study no real progress was making, and that it was possible for pupils to pass along in the Newton High School, with little or no effort on their part.

Many parents and guardians came to members of the School Board, with complaints against the management of the school, and its lack of discipline. Several members of the Committee visited the school, and were convinced that the complaints made were well founded. These complaints became so serious and frequent, that it was thought best to make a thorough examination of the school, determine its real condition, and devise, if possible, some way of reforming its methods.

Before acting upon any change in the governing power, the superintendent, who had been directed some months previous, by a unanimous vote of the Committee on the High School, to examine it, and make a report upon its condition, submitted the result of his investigations. His conclusions agreed fully with those formed by a majority of the Committee.

It should be borne in mind, that the authority to govern the school, and to direct all its affairs, is vested in the head master. He is thus made responsible for its government and its general management. He can teach the number of hours in the week that the best interest of the school demands, and the rest of the time he is to give to general supervision.

The importance which the School Board attaches to the proper supervision of this school by the master, may be inferred from the fact, that, during the past few years, nearly three-fifths of his time has been allowed for supervision, and the remaining two-fifths for instruction.

That he may fill his place as head master, he must not only be able to teach his special classes, but, in addition to this, he is expected to have the general direction of the work of his assistant teachers, to wisely distribute among

them the work especially adapted to each, and to be the source from which they are to derive their authority in the discipline of their classes. He must have a perception of what constitutes good order in school, he must be wise enough to establish a good government such as will lead to self-government, and he must have executive ability to enforce its rules and regulations. His executive power should be such that the pupils will respect it everywhere, and under all circumstances. These attributes the head master failed, in the opinion of a majority of the Board, to exhibit; and besides, in conference with the Committee, he recommended no change in his corps of teachers.

It became evident to them, therefore, that the necessary reforms could not be made under his administration, and the necessity for a change became imperative. To make it was an unpleasant duty, and one which no member of the Committee would consent to perform unless the best interests of the High School should demand it. The change was made, and made as quietly as possible under the circumstances, in the hope that all that discussion and controversy which is so disastrous to personal reputation, to the school spirit of a town, to the good name and to the prosperity of its schools, might be avoided.

The Committee look forward to the future of the High School, with confidence that it will again take the highest rank among the high schools of the Commonwealth.

Two male teachers have been employed in the place of two female teachers. One additional teacher has been employed, owing to the increase of the number of school exercises, amounting to thirty in the week.

The City Council has provided a commodious and sub-

stantial addition to the High School building. It will add much to the comfort and convenience of the scholars, and furnish them a most important means for the accomplishment of the ends for which they study.

E. W. CONVERSE.

J. W. DICKINSON.

W. C. FROST.

SECRETARY'S REPORT.

APPROPRIATIONS AND EXPENDITURES FOR 1887.

General appropriation	\$101,000 00	
Received from the dog tax	2,337 66	
	<hr/>	\$103,337 66
Transferred to evening schools	\$500 00	500 00
		<hr/>
		\$102,837 66
Amount paid to the superintendent . . .	\$2,800 00	
" " " teachers	86,078 76	
" " " janitors	6,408 34	
" " " secretary	300 00	
" " for fuel	7,228 55	
	<hr/>	
Amount expended		102,815 65
		<hr/>
Balance unexpended		\$22 01
		<hr/>
School incidentals	\$12,000 00	
Transferred to evening schools	100 00	
	<hr/>	\$11,900 00
Amount expended		11,898 43
		<hr/>
Balance unexpended		\$1 57
		<hr/>
Evening schools	\$550 00	
Transferred from incidentals	100 00	
" " conveyance of pupils	70 00	
" " general appropriation	500 00	
	<hr/>	\$1,220 00
Amount expended		1,217 89
		<hr/>
Balance unexpended		\$2 11
		<hr/>

Conveyance of pupils	\$750 00	
Transferred to evening schools . . .	70 00	
	<hr/>	\$680 00
Amount expended		676 25
		<hr/>
Balance unexpended		\$3 75
		<hr/>

RECAPITULATION.

APPROPRIATIONS.

Total amount, including dog tax . . .	\$116,637 66
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EXPENDITURES.

General appropriation	\$102,815 65	
Incidentals	11,898 43	
Evening schools	1,217 89	
Conveyance of pupils	676 25	
	<hr/>	
Total amount expended		116 608 22
		<hr/>
Balance unexpended		\$29 44
		<hr/>

THOMAS EMERSON, *Secretary.*

DECEMBER 28, 1887.

SUPERINTENDENT'S REPORT.

To the School Committee of Newton.

In conformity to the rules of the Board, I respectfully present my annual report of the work of the schools for the year 1886-87. The schools were in session forty weeks, beginning Sept. 13, 1886, and ending July 1, 1887.

A general exhibit of the results of the last school census, of the number of school buildings and the value of the school property, of the enrolment and attendance of the pupils, and of the cost of the schools, will be found in the following statistics : —

POPULATION.

Population of the city, State census of 1885 . . .	19,759
Number of persons in the city between five and fifteen years of age, May 1, 1887 . . .	3,893
Number of pupils between five and fifteen years of age attending the public schools, in May, 1887, . . .	3,220
Number of pupils between five and fifteen years of age in private schools	193
Number of persons between five and fifteen years of age not attending school	480

SCHOOL BUILDINGS.

Number of school houses	21
Number of buildings rented for school purposes	1
Number of occupied rooms, May 1, 1887	91
Number of unoccupied rooms, May 1, 1887	8
Total number of rooms, May 1, 1887	99
Number of halis, May 1, 1887	5
Total number of sittings, May 1, 1887	4,525

The total value of the school houses, furniture, apparatus, and land is \$581,600. The following table gives the value of the school property in detail : —

High School buildings, furniture and land	\$113,000 00
Bigelow School House, furniture and land	44,000 00
Underwood School House, furniture and land	24,000 00
Lincoln School House, furniture and land	5,500 00
Jackson School House, furniture and land	15,000 00
Eliot School House, furniture and land	19,000 00
Adams School House, furniture and land	22,500 00
Claffin School House, furniture and land	35,000 00
Pierce School House, furniture and land	32,000 00
Davis School House, furniture and land	13,000 00
Franklin School House, furniture and land	15,500 00
Barnard School House, furniture and land	21,000 00
Williams School House (old) and land	10,000 00
Williams School House (new), furniture and land	35,000 00
Hamilton School House, furniture and land	28,000 00
Prospect Grammar School House, furniture and land	31,000 00

Prospect Primary School House, furniture and land	7,500 00
Hyde School House, furniture and land	24,500 00
Mason School House, furniture and land	49,100 00
Rice School House, furniture and land	20,000 00
Oak Hill School House, furniture and land	12,000 00
School apparatus	5,000 00
	<hr/>
	\$581,600 00

SCHOOLS.

High School	1
Grammar schools	46
Primary schools	38
Mixed school	1
	<hr/>
Total	86

TEACHERS.

Number of teachers in High School	11
Male teachers, 3; female teachers, 8.	
Special teachers in High School	3
Male teachers, 1; female teachers, 2.	
Number of teachers in Grammar Schools	46
Male teachers, 10; female teachers, 36.	
Number of teachers in Primary Schools	38
Number of teachers in Mixed School	1
Special teachers of sewing	3
Special teachers of music	1
Whole number of teachers	103
Male teachers, 15; female teachers, 88.	

ENROLMENT AND ATTENDANCE.

Whole number of pupils enrolled, 1886-87 . . .	4,337
Whole number of pupils enrolled, 1885-86 . . .	4,106
Increase	231
Average whole number of pupils enrolled, 1886-87,	3,655.7
Average whole number of pupils enrolled, 1885-86,	3,527.7
Increase	128
Average number of pupils in daily attendance,	
1886-87	3,357.1
Average number of pupils in daily attendance,	
1885-86	3,238.8
Increase	118.3
Average per cent of daily attendance, 1886-87 . . .	91.3
Average per cent of daily attendance, 1885-86 . . .	91.8
Decrease . . . . .	.5
Whole number of tardinesses, 1886-87	5,214
Whole number of tardinesses, 1885-86	5,105
Increase	109
Whole number of pupils enrolled in Evening	
School, 1886-87 (males, 62; females, 58) . . .	120
Whole number of pupils enrolled in Evening	
School, 1885-86	152
Decrease	32
Average number in attendance, 1886-87	60
Average number in attendance, 1885-86	98
Decrease	38

The following table shows the total enrolment, average whole number, average attendance, and per cent of attendance, in the schools from 1878 to 1887, a period of ten years. The increase in the total enrolment of pupils during this

period was 983; in the average whole number, 915; in the average attendance, 616.

YEARS.	Total Enrolment.	Average Whole Number.	Average Attendance.	Per cent of Attendance.
1878	3,354	2,740.7	2,527.1	91.9
1879	3,397	2,791.7	2,540.9	91.0
1880	3,418	2,821.4	2,571.3	91.5
1881	3,677	2,844.7	2,588.3	91.0
1882	3,759	3,092.7	2,796.7	90.4
1883	4,002	3,170.3	2,903.8	91.6
1884	3,963	3,275.9	2,992.9	91.4
1885	4,029	3,356.5	3,047.2	90.8
1886	4,106	3,527.7	3,238.8	91.8
1887	4,337	3,655.7	3,357.1	91.3

SCHOOL CENSUS.

In conformity to the requirement of the General Statutes, an enumeration of the school population of the city was made in May last, and a record of the same has been deposited in this office.

The school population of the city on the first day of May, 1887, was 3,893, — an increase of 108, as compared with the year 1886. By reference to Table I in the appendix to this report, it will be seen that there is an increase in all the wards except the fourth. In the fourth there was a decrease of three.

The number of pupils between five and fifteen years of age attending the public schools, on the first day of May, 1887, was 3,220; the number in private schools was 193; making the total number of pupils between five and fifteen years of age in the public schools of the city, and in private schools, on the first day of May, 1887, 3,413. Deducting

this sum from 3,893, the total school population of the city, we have 480, which is the number of persons in the city, between five and fifteen years of age, not attending any school, public or private, on the first day of May, 1887. Of this number 47 were at work in mills and elsewhere, and 414, most of whom were under seven years of age, were at home, leaving 19 to be accounted for, — a decrease of 48, as compared with last year. It would be unreasonable to expect a greater degree of accuracy than is shown in this census.

SCHOOL HOUSES.

The number of school houses in the city is twenty-one. The number in use during the past year was twenty. The school at Thompsonville occupied a rented building. The whole number of sittings, including those in the leased building, was 4,525.

Important repairs and alterations have been made in several of the school buildings, chiefly with a view to improving their sanitary condition.

The Bigelow School House has been improved by the addition of new water-closets; and the old, worn-out buildings have been removed. The new closets were built in accordance with plans prepared by Messrs. Allen & Kenway, and are furnished with every safeguard to health that the best methods of drainage and ventilation can supply.

The outside of the Lincoln School House has been painted, the furniture has been thoroughly repaired, and additional windows have been placed in the lower room. The increased supply of light and air was much needed, and makes the room more cheerful and healthful.

The Adams School House has been greatly improved by the

introduction of the Mihan system of ventilation. Heretofore the ventilation of these buildings has been very defective; the chief means being the windows, the use of which for this purpose is at all times attended with danger, and in the winter is extremely hazardous. The roofs of the Adams and Claflin school houses, which have leaked badly for several years, have been successfully repaired. A substantial iron railing has been placed upon the staircases of the Claflin School House. As two of the classes occupy the third story of this building, this precaution seemed necessary as a protection against accidents from day to day, and especially as a safeguard against more serious consequences in the event of a sudden emergency.

The halls of the Davis School House have been supplied with water, a large window has been placed in one of the lower rooms, and the furniture of two of the rooms has been re-arranged for the more complete utilizing of the light.

The sanitary condition of the Franklin School House has been greatly improved by alterations in the water-closets.

Changes have been made in the location of some of the radiators at the Williams School House, a considerable portion of the heat having been wasted by reason of their too close proximity to the ventilating ducts.

The interior of the Prospect School House has been improved. The wood work has been renovated, and the walls of the school rooms have been kalsomined.

The outside of the Hyde School House has been painted, and the furniture of one of the rooms has been thoroughly repaired. The building has been still further improved by the introduction of the Mihan system of ventilation.

The old High School building has been improved by the

partial introduction of the Mihan system of ventilation, and by the re-arrangement of the class-rooms made possible by the occupation of the new building.

Two new furnaces have been placed in the old High School building, and one in the school house at Oak Hill.

Improvements in some of the school grounds have made them much more attractive. This is especially true of those of the High, Claflin, Williams, and Mason schools.

It is exceedingly gratifying to me to report, that nearly all the repairs and alterations of the past year were made with a view to improving the sanitary condition of the schools, and that, as far as I am able to judge at this time, the work has been done judiciously and successfully.

The present needs of the school buildings are in the direction of improved ventilation. Carbonic-acid gas is not conducive to the growth of intellectual or moral fibre. Pure air is a necessity and should be supplied abundantly, let the cost be what it may. The Bigelow, Underwood, Eliot, Adams, Barnard, Williams, Hyde, and Rice school houses, and the new addition to the High School building, are well supplied with the means of ventilation. The Jackson, Claflin, Pierce, Davis, Franklin, Prospect, Mason, and Oak Hill school houses, and the old High School building, are very defective in this particular, and I recommend a prompt and vigorous prosecution of the work of improvement.

In my report to the Board at its regular monthly meeting in June last, I called attention to the need of additional school accommodations at Newton Highlands. I beg leave again, to call attention to the same subject, and to repeat the statement made at that time.

The number of pupils enrolled in the Hyde School on

the first day of May of the present year was 218; the number of teachers was six; the average number of pupils to a teacher, 36.3. All the rooms of the present school building are occupied. Those on the third floor may be used in case of necessity; but it is doubtful, at least, if their permanent use is justifiable. The growth of this district has been quite rapid since the completion of the Circuit Railroad. I am informed that no less than thirty houses have been erected during the past year, and it is believed that a considerable number will be built during the present year. Under these circumstances it is probable that additional accommodations will be needed before they can be provided.

The additional accommodations needed may be provided by enlarging the present school building, or by the erection of a new building north of the present one. In the event of the adoption of either of these plans, there would be no necessity for the purchase of additional land, the present school grounds being ample for the purpose.

Another plan suggests itself. A considerable number of the pupils of the Hyde School live near the junction of Walnut and Beacon streets. Some of the children in this locality attend the Rice and Mason schools at Newton Centre. Again, most of the children living near the junction of Walnut and Homer streets attend the Claflin School at Newtonville. The distance that the children in both these localities are obliged to travel is, in my judgment, greater than we can reasonably require of primary pupils. It works a hardship to this class of pupils in very cold or stormy weather, and materially affects their attendance and progress at school. In view of these facts, I recommend the erection of a building of two rooms on Walnut Street, between Homer

and Beacon streets, for the accommodation of the primary pupils residing in the neighborhood. The children who would attend this school would be drawn from the Hyde, Rice, and Claflin schools, and thus the over-crowding of those schools would be prevented for some time to come.

ATTENDANCE.

The statistics of attendance during the past year are quite unsatisfactory. The average daily attendance was ninety-one and three-tenths per cent of the average whole number belonging to the schools,—a falling off of five-tenths of one per cent, as compared with the previous year. The average daily absence was eight and seven-tenths. That is, out of an average enrolment of 3,655 pupils, there was an average daily attendance of 3,357, and an average daily absence of 298. The aggregate number of pupils who were absent every school day for the entire year was more than enough to form seven schools of forty pupils each. The per cent of absence in the several schools varies from four and four-tenths to fourteen and one-tenth; the lowest per cent being in one of the grammar schools, and the highest in one of the primary schools.

Referring to the last report of the secretary of the State Board of Education, I find that in a table in which all the towns of the State—349 in number—are numerically arranged according to the average attendance of the children of school age upon the public schools, Newton occupies the one hundred and fifth place.

Consider for a moment the financial aspect of this subject. The cost of the schools is, in round numbers, six hundred dollars a day. Whether the pupils are present or absent, the

cost is the same. The absences of the past year, amounting in all to 59,600 days, involved a waste of nearly nine per cent of all the money expended upon the schools. For this waste the patrons of the schools are alone responsible, and it is to them that the taxpayers are to look for the remedy. Surely, here is an opportunity for retrenchment of the most practical kind.

The record of tardinesses is also far from satisfactory. The whole number of tardinesses during the past year was 5,214, an increase of 109 as compared with the previous year. Furthermore, these tardinesses are confined chiefly to a comparatively small number of schools, the High School having a total of 2,413, being nearly one-half of the aggregate number in all the schools. They are a serious evil, in that they interrupt the work, and retard the progress of the school. This evil can be abated through the earnest co-operation of parents and teachers.

COST OF THE SCHOOLS.

The following table shows the total cost of the schools, exclusive of the amount expended for the evening schools and for new school buildings, from 1878 to 1887. It also shows the cost per pupil, based upon the average whole number belonging. The average cost per pupil for the ten years was \$32.69.

The aggregate cost of the evening schools during the corresponding period was \$6,443.81, being an average of \$644 38 per year.

The amount expended for new school buildings during the year 1887 was \$54,626.59. This amount represents the cost of the addition to the new High School building, exclusive of the blackboards and furniture.

COST OF THE SCHOOLS, 1878-87.

YEAR.	Whole Cost.	Average Whole Number.	Cost per Pupil.
1878	\$86,839 17	2,740.7	\$31 68
1879	82,521 04	2,791.7	29 56
1880	86,397 64	2,824.4	30 59
1881	87,669 48	2,844 7	30 82
1882	94,885 43	3,092 7	30 68
1883	119,359 75	3,170.3	37 65
1884	109,103 42	3,185.9	34 25
1885	111,632 56	3,356.5	33 25
1886	121,154 20	3,527.7	34 35
1887	124,718 13	3,655.7	34 11

The amount expended upon the schools during the past year, under the direction of the School Board, was \$115,390.33, being an average of \$31.56 per pupil. The amount expended under the direction of the City Council, chiefly for permanent improvements, was \$9,327.80. The aggregate amount expended was \$124,718.13, being an average of \$34.11 per pupil.

The expenditures of the School Board include the following items: teachers' salaries, \$86,078.76; salary of superintendent, \$2,800; salary of secretary, \$300; salaries of janitors, \$6,408.34; fuel, \$7,228.55; conveyance of pupils, \$676.25; incidentals, \$11,898.43.

The incidental expenses include the following items: books and other supplies, \$6,323.99; repairs, \$1,715.97; furniture, \$1,441.35; miscellaneous, \$2,417.12.

The comparative cost of the schools may be gathered from the following tables. The first is a graduated table in which the cities in the State are numerically arranged ac-

cording to the percentage of their taxable property appropriated to the support of public schools for the year 1886-87. The second is a similar exhibit of the cities and towns of Middlesex County.

The statistics of the schools of the State and county are inserted here for the convenience of those who do not have access to the report of the secretary of the State Board of Education, from which they are taken.

Comparing the towns and cities of the State with reference to the percentage of their taxable property appropriated to the support of public schools during the past year, we find that Newton is the twelfth among the twenty-three cities of the State, the thirty-fourth among the forty-seven cities and towns of Middlesex County, and the two hundred and twenty-first among the three hundred and forty-nine cities and towns of the Commonwealth. To be more definite, the town of Natick appropriates four and forty-one hundredths mills on each dollar of its valuation for the support of its public schools; the city of Watham, four and fifteen hundredths; Newton, three and twelve hundredths. The town of Marlborough contributes five and thirty-nine hundredths, being the highest percentage in the State. In short, there are thirty-three towns and cities in the county, and two hundred and twenty in the State, that contribute to the support of their schools more liberally than Newton in proportion to their wealth.

For 1886-87 by the State Valuation of 1886.	CITIES.	Percentage of Valuation appropriated to Public Schools equivalent to mills and hundredths of mills.	For 1886-87 by the State Valuation of 1886.	CITIES.	Percentage of Valuation appropriated to Public Schools equivalent to mills and hundredths of mills.
1	Waltham . . .	\$004-15	13	Northampton .	\$003-12
2	Gloucester . .	4-13	14	Fall River . .	3-09
3	Haverhill . . .	3-79	15	Cambridge . .	3-02
4	Holyoke . . .	3-49	16	Brockton . . .	2-98
5	Lynn	3-46	17	Lowell	2-98
6	Somerville . .	3-46	18	Lawrence . . .	2-84
7	Worcester . . .	3-45	19	Salem	2-84
8	Fitchburg . . .	3-36	20	New Bedford .	2-73
9	Chelsea	3-21	21	Newburyport .	2-67
10	Malden	3-16	22	Springfield . .	2-67
11	Taunton	3-13	23	Boston	1-96
12	Newton	3-12			
<i>Towns and Cities of Middlesex County.</i>					
1	Marlborough . .	\$005-39	28	Chelmsford . .	\$003-39
2	Natick	4-41	29	Acton	3-34
3	Stoneham . . .	4-35	30	Littleton . . .	3-33
4	Wakefield . . .	4-22	31	Watertown . .	3-23
5	Waltham	4-15	32	Framingham . .	3-19
6	Hudson	4-13	33	Malden	3-16
7	Westford . . .	4-12	34	Newton	3-12
8	Winchester . .	4-09	35	Pepperell . . .	3-08
9	North Reading,	3-91	36	Maynard . . .	3-07
10	Arlington . . .	3-86	37	Cambridge . .	3-02
11	Holliston . . .	3-80	38	Wilmington . .	2-99
12	Ashby	3-79	39	Lowell	2-98
13	Wayland	3-78	40	Everett	2-84
14	Woburn	3-68	41	Weston	2-74
15	Ayer	3-67	42	Boxborough . .	2-70
16	Concord	3-66	43	Burlington . .	2-70
17	Hopkinton . . .	3-65	44	Sherborn . . .	2-65
18	Ashland	3-64	45	Dracut	2-58
19	Townsend . . .	3-61	46	Dunstable . . .	2-58
20	Tyngsborough .	3-61	47	Belmont	2-56
21	Lexington . . .	3-56	48	Billerica . . .	2-36
22	Melrose	3-55	49	Carlisle	2-24
23	Medford	3-47	50	Stow	2-24
24	Reading	3-47	51	Sudbury	2-03
25	Somerville . . .	3-46	52	Groton	1-97
26	Bedford	3-40	53	Lincoln	1-91
27	Shirley	3-40	54	Tewksbury . .	1-84

The school system of Newton is an expensive one, even when administered with the greatest economy that is consistent with a proper regard for its efficiency. This is due to the fact, that the city is made up of nine villages which are so widely separated that it is impossible to mass the pupils in a few school buildings as is done in the other cities and large towns of the State. This peculiarity in the geographical features of our city makes it especially charming as a place of residence. Indeed, it is in this that its attractiveness chiefly consists. But those characteristics that constitute its chief charm, and have contributed so largely to its growth and prosperity, make the maintenance of its schools and streets exceptionally difficult and expensive. If our city were of smaller area, and the population were more compact, —like that of Chelsea, for example, whose population is about equal to that of Newton,—our schools could be maintained at much less expense than now. The cost of instruction would be less, there would be a considerable saving in the fuel and the care of the school houses, and the cost of the buildings and grounds would be greatly reduced. The annual saving would be from \$15,000 to \$20,000. And this reduction would be made without impairing, in the slightest degree, either the efficiency or usefulness of the schools.

The peculiar geographical features to which I have referred constitute the weakness of our municipal organization, in that they compel large annual expenditures of the public money, and thereby increase the rate of taxation. They are at the same time an element of strength, in that they lead people of wealth and culture to make their homes within the limits of the city. They make liberal appropria-

tions a necessity, but they at the same time increase the ability of the people to meet the demands that are made upon them.

A more detailed exhibit of the statistics of the schools will be found in the tables appended to this report.

Table I shows the number of persons in the city, between five and fifteen years of age, May 1, 1881-87.

Table II shows the number of rooms, halls, sittings, pupils, teachers, number of pupils to a teacher, number of pupils over fifteen years of age, and number under five years of age, in each school, May 1, 1887.

Table III shows the semi-quarterly attendance, by schools, for the year ending July 1, 1887.

Table IV shows the total enrolment, attendance, etc., by schools, for the year ending July 1, 1887.

Table V shows the number of pupils and their average age, by grades, in September, 1886.

Table VI shows the annual enrolment in each grade in September, 1880-86.

Table VII shows the percentage of the total annual enrolment in each grade, in September, 1880-86.

Table VIII shows the distribution of the pupils in the High School, by grades and courses of study.

TRUANCY.

The truant officer has discharged his duties faithfully and acceptably during the past year. Two hundred and seventy-four cases of absence have been investigated. Of the absentees, two hundred and eight were truants. One boy has been convicted as an habitual truant, and sent to the Law-

rence Industrial School. There are also ten habitual truants now on probation.

In my last Annual Report I called the attention of the Board to the General Statutes, chap. 48, sect. 14, which provide, that "If three or more towns in any county so require, the county commissioners shall establish, at the expense of the county, at convenient places therein, other than the jail or house of correction, truant schools for the confinement, discipline, and instruction of minor children convicted under the provisions of sects. 10 and 12 [of the truant law], and shall make suitable provisions for the government and control, and for the appointment of proper teachers and officers thereof."

I also recommended that we avail ourselves of these provisions of the Statutes, and that, for this purpose, we invite two or more of the neighboring municipalities to join with us in a petition to the county commissioners for the establishment and maintenance of a school to which truants, and, in case the Legislature shall give the requisite authority, those pupils "who persistently refuse to comply with the reasonable rules and regulations of the schools," may be sent for discipline and instruction.

Another year's observation and reflection have strengthened my conviction that the need of such a school is imperative, and that the best interests of our schools require its establishment. I again respectfully commend the subject to your consideration.

TEXT-BOOKS.

The number of text-books in use during the past year was 32,747, an increase of 6,088 as compared with the previous

year; the number of reference-books was 1,789, an increase of 106 as compared with the previous year. They were distributed as follows: —

SCHOOLS.	Text-Books.	Reference-Books.	Worn out.
High	4,893	120	216
Bigelow	3,900	181	104
Eliot	2,811	132	107
Adams	2,005	123	30
Clafin	2,074	130	10
Pierce	4,586	253	69
Williams	2,501	209	48
Hamilton	1,464	120	21
Prospect	2,487	142	15
Hyde	2,220	119	16
Mason	3,806	260	125
Totals	32,747	1,789	761

The amount expended for new books was \$3,526.62; the amount paid for re-binding books was \$315.38: making a total of \$3,842. The cost per pupil was \$1.05. The number of books worn out and missing at the close of the year was 761.

EVENING SCHOOL.

The Evening School was in session three evenings a week, from Nov. 1, 1886, to Feb. 7, 1887. The whole number of pupils enrolled was 120: males, 62; females, 58. The largest attendance at any session was 120; the smallest was 17. The average number in attendance was 60.

Instruction was given in the common English branches, book-keeping, and industrial drawing. The teachers of this school were patient and faithful in the performance of their

duties, and the pupils applied themselves to their work with commendable zeal and perseverance.

GENERAL CONDITION.

The schools have made commendable progress during the past year, and their present condition is quite satisfactory. They are better supplied than heretofore with globes, maps, charts, moulding-boards, and other appliances and aids in teaching. The methods of instruction are more intelligent and effective. This is especially true of the instruction in geography and history. Outline maps drawn upon the blackboard from memory, and the topical method of study and recitation, are used almost exclusively. The improvement in these branches is quite pronounced; and it is gratifying to be able to report, that the change in the methods of instruction has led to increased interest in these subjects, on the part of both teachers and pupils.

The number of diplomas awarded in the several grammar schools in June last was as follows: Bigelow 35, Adams 24, Claflin 7, Pierce 40, Williams 16, Hamilton 4, Prospect 18, Hyde 18, Mason 24. The whole number was 186.

The number of High School certificates awarded in the several grammar schools was as follows: Bigelow 25, Adams 24, Claflin 7, Pierce 35, Williams 16, Hamilton 4, Prospect 18, Hyde 16, Mason 22. The whole number was 167.

The number of pupils graduated from the High School was 82. Of these, 43 had completed the general course, 19 the classical course, and 20 the mercantile, or three years' course.

The names of the High School graduates will be found on p. 49 of the Appendix to this report.

My thanks are due to the teachers for their generous co-operation, and to the members of the Board for many kindnesses and courtesies.

Respectfully submitted.

THOMAS EMERSON, *Superintendent.*

DECEMBER 28, 1887.

APPENDIX.

STATISTICS IN DETAIL.

TABLE I.—Number of Persons in the City between Five and Fifteen Years of Age, May 1, 1881-87, by Wards.

WARDS.	1882.	1883.	1884.	1885.	1886.	1887.	Increase.	Decrease.
I. . . .	453	512	541	527	545	582	37	-
II. . . .	603	699	705	705	717	732	15	-
III. . . .	449	519	543	531	594	598	4	-
IV. . . .	523	554	567	593	602	599	-	3
V. . . .	436	460	461	423	480	486	6	-
VI. . . .	494	558	559	560	559	601	42	-
VII. . . .	291	262	274	272	288	295	7	-
Totals .	3,252	3,564	3,653	3,611	3,785	3,893	111	3

TABLE II.—Number of Rooms, Halls, Sittings, Pupils, Teachers, Number of Pupils to a Teacher, Number of Pupils over 15 Years of Age, and Number under 5 Years of Age, in Each School, May 1, 1887.

SCHOOLS.	Rooms, occupied.	Rooms, unoccupied.	HALLS.	Sittings.	Number of Pupils.	Number of Teachers.	Number of Pupils to a Teacher.	Number of Pupils over 15 Years of age.	Number of Pupils under 5 Years of age.
High	6 *	0	0	453	439	11 †	39.9	380	0
Bigelow	8	0	1	375	321	8	40.1	33	0
Underwood	4	0	0	194	176	4	44.0	0	0
Lincoln	1	1	0	123	50	1	50.0	0	3
Ellet	4	0	0	193	130	4	32.5	13	0
Jackson	5	1	0	249	217	5	43.4	0	0
Adams	6	0	0	278	234	6	39.0	25	1
Clafin	5	1	0	197	191	5	38.2	0	0
Pierce	4	0	1 †	241	218	5	43.6	35	0
Davis	4	0	0	202	169	4	42.2	0	0
Franklin	4	0	0	208	174	4	43.5	0	1
Barnard	3	1	0	147	119	3	39.7	0	2
Williams	8	0	0	370	310	8	38.8	24	0
Hamilton	4	0	1	163	108	4	27.0	1	0
Prospect	6	2	1	265	220	6	36.7	7	2
Hyde	6	0	0	264	218	6	36.3	14	1
Mason	7	1	1	320	202	7	37.6	22	0
Rice	4	0	0	203	176	4	44.0	0	0
Thompsonville	1	0	0	40	30	1	30.0	0	0
Oak Hill	1	1	0	40	22	1	22.0	0	0
Totals	91	8	5	4,525	3,784	97	39.0	554	10

* Also four recitation rooms, one laboratory, and one art room.

† The hall of the Pierce School House is used as a class-room.

† Also three special teachers.

TABLE III. — Semi-Quarterly Attendance, Etc., by Schools, for the Year ending July 1, 1887.

Schools.	I.						II.						III.						IV.					
	Average Whole Number.	Average Attendance.	Percentage of Attendance.	Cases of Tardiness.	Cases of Corporal Punishment.		Average Whole Number.	Average Attendance.	Percentage of Attendance.	Cases of Tardiness.	Cases of Corporal Punishment.		Average Whole Number.	Average Attendance.	Percentage of Attendance.	Cases of Tardiness.	Cases of Corporal Punishment.		Average Whole Number.	Average Attendance.	Percentage of Attendance.	Cases of Tardiness.	Cases of Corporal Punishment.	
High . . .	457.5	431.6	95.6	105	0		457.3	436.8	95.6	219	0		454.1	411.6	90.6	274	0		454.6	414.7	91.2	349	0	
Bigelow . . .	313.9	300.8	95.8	18	0		313.6	298.1	95.0	22	0		311.5	287.9	92.4	24	0		306.5	284.5	92.7	25	0	
Underwood . . .	167.6	134.9	92.3	20	0		177.8	163.3	91.7	46	0		175.2	151.2	85.7	56	0		159.0	131.8	82.0	40	0	
Lincoln . . .	41.7	38.9	93.3	19	0		45.1	41.9	92.9	9	0		42.6	36.4	85.5	5	1		40.0	33.6	83.5	2	0	
Eliot . . .	140.1	130.6	93.9	9	0		141.3	127.3	89.9	3	0		138.3	122.5	88.3	6	0		135.8	120.4	88.3	11	0	
Jackson . . .	197.4	177.9	90.4	23	0		198.2	174.6	88.1	20	1		179.7	155.6	86.3	32	0		176.8	154.9	87.0	21	1	
Adams . . .	223.3	219.9	95.7	10	0		233.6	223.2	95.4	17	0		232.4	211.7	90.3	9	0		224.5	206.8	91.4	11	1	
Cladlin . . .	180.7	170.2	94.3	13	0		189.3	177.9	94.2	19	0		189.8	175.5	92.5	17	0		186.4	167.9	90.3	21	1	
Pierce . . .	209.4	204.1	97.4	4	1		211.4	204.1	96.6	11	2		209.4	200.3	95.7	2	5		210.4	201.2	95.6	5	1	
Davis . . .	166.8	150.0	95.3	11	0		167.1	161.2	96.4	20	0		164.9	153.5	93.0	8	1		161.4	143.6	88.7	4	1	
Franklin . . .	177.4	169.7	95.6	4	5		174.0	165.2	94.8	16	2		172.0	160.0	92.5	30	4		165.5	154.6	92.6	11	1	
Barnard . . .	102.3	99.4	96.7	8	1		106.7	102.2	95.1	5	2		104.6	98.0	92.9	1	0		104.4	96.2	91.6	3	1	
Williams . . .	313.5	292.3	93.3	51	4		316.4	295.2	93.2	30	3		310.8	283.3	91.1	23	3		304.5	272.6	89.1	29	1	
Hamilton . . .	108.8	106.0	97.3	11	0		103.8	99.6	95.8	20	4		99.8	93.0	92.5	9	0		102.0	96.7	94.3	17	0	
Prospect . . .	214.6	208.1	96.9	9	2		225.4	2.63	96.0	19	0		227.2	215.6	94.8	43	1		226.9	211.9	93.5	16	1	
Hyde . . .	201.2	187.4	93.1	37	2		207.3	188.6	91.1	29	1		209.2	184.0	88.0	45	0		213.3	186.8	87.7	59	8	
Mason . . .	279.4	261.1	93.5	45	0		278.5	259.5	93.2	57	1		276.6	250.6	90.0	80	0		272.4	241.4	88.6	88	0	
Rice . . .	157.0	144.0	91.7	27	0		159.5	140.9	88.2	32	0		157.9	132.0	85.8	56	0		155.6	127.0	81.3	65	0	
Thompsonville . . .	28.2	26.2	92.6	5	0		27.0	22.7	84.0	5	0		27.0	21.3	79.0	4	0		23.6	20.1	85.5	4	0	
Oak Hill . . .	25.2	22.8	90.7	7	1		23.4	21.6	92.0	1	0		21.1	18.0	85.6	1	0		19.9	17.3	88.0	7	1	

TABLE III. (Concluded). — Semi-Quarterly Attendance, Etc., by Schools, for the Year ending July 1, 1887.

Schools.	V.						VI.						VII.						VIII.						
	Average Whole Number.	Attendance.	Percentage of Attendance.	Cases of Tardiness.	Cases of Corporal Punishment.	Average Whole Number.	Average Attendance.	Percentage of Attendance.	Cases of Tardiness.	Cases of Corporal Punishment.	Average Whole Number.	Average Attendance.	Percentage of Attendance.	Cases of Tardiness.	Cases of Corporal Punishment.	Average Whole Number.	Average Attendance.	Percentage of Attendance.	Cases of Tardiness.	Cases of Corporal Punishment.	Average Whole Number.	Average Attendance.	Percentage of Attendance.	Cases of Tardiness.	Cases of Corporal Punishment.
High . . .	447.8	408.5	91.2	349	0	438.3	393.3	89.7	360	0	425.7	381.9	89.7	413	0	413.1	356.8	86.3	344	0	413.1	356.8	86.3	344	0
Bigelow . . .	317.9	297.9	93.7	23	0	314.5	289.3	92.0	18	0	309.9	287.8	92.8	27	0	294.1	278.9	94.8	17	0	294.1	278.9	94.8	17	0
Underwood . .	138.2	121.1	86.8	19	0	162.6	144.1	88.5	36	0	172.0	159.3	92.3	26	0	170.8	152.7	89.4	24	0	170.8	152.7	89.4	24	0
Lincoln . . .	40.8	35.9	87.9	5	0	48.3	41.2	83.9	4	0	48.5	42.6	87.8	8	0	50.8	46.7	91.8	4	0	50.8	46.7	91.8	4	0
Elliot . . .	140.6	126.3	89.8	2	0	134.3	120.5	90.0	5	0	124.7	108.4	87.1	11	0	119.2	111.2	93.3	0	0	119.2	111.2	93.3	0	0
Jackson . . .	176.0	152.0	85.9	4	1	200.5	180.7	90.0	2	0	207.3	182.4	87.7	12	1	185.5	162.4	86.9	14	2	185.5	162.4	86.9	14	2
Adams . . .	225.6	210.9	92.9	13	1	227.5	200.1	91.2	5	2	231.8	218.4	94.0	9	3	217.3	202.3	92.3	6	1	217.3	202.3	92.3	6	1
Chaffin . . .	178.7	159.9	90.1	9	1	176.0	157.2	89.6	18	1	184.2	170.7	93.1	11	0	180.3	166.8	92.9	13	1	180.3	166.8	92.9	13	1
Pierce . . .	217.2	208.1	95.8	1	9	213.4	200.8	94.0	9	2	209.9	198.3	94.0	2	0	204.0	196.1	96.1	2	2	204.0	196.1	96.1	2	2
Davis . . .	154.5	142.2	91.8	5	0	163.0	152.3	93.2	6	3	166.1	156.6	94.3	12	0	160.5	151.5	94.4	17	1	160.5	151.5	94.4	17	1
Franklin . . .	160.3	152.1	94.0	9	4	166.8	155.1	93.0	21	0	170.7	159.9	93.4	21	2	167.2	158.9	94.7	7	3	167.2	158.9	94.7	7	3
Barnard . . .	101.5	96.8	95.1	2	1	102.6	95.8	93.2	1	0	113.5	107.1	91.1	4	0	107.1	97.9	91.6	4	0	107.1	97.9	91.6	4	0
Williams . . .	296.8	273.7	91.8	36	5	294.8	265.0	89.9	28	3	303.8	279.4	92.0	22	1	285.1	267.0	93.8	21	1	285.1	267.0	93.8	21	1
Hamilton . . .	102.6	96.4	93.2	4	0	106.0	99.4	93.3	21	0	105.4	99.7	94.5	34	2	100.1	96.8	96.5	11	2	100.1	96.8	96.5	11	2
Prospect . . .	222.6	212.3	95.2	26	0	218.0	203.0	93.0	33	0	215.7	203.4	94.1	17	0	202.3	192.2	94.8	16	0	202.3	192.2	94.8	16	0
Hyde . . .	213.6	191.4	89.5	29	1	212.0	181.4	85.7	42	8	215.2	193.4	89.4	47	2	206.7	183.7	89.1	34	1	206.7	183.7	89.1	34	1
Mason . . .	274.7	253.6	92.2	46	4	266.9	238.8	89.2	52	0	248.3	225.0	90.5	44	0	225.5	208.9	92.4	30	0	225.5	208.9	92.4	30	0
Rice . . .	154.9	135.1	86.7	39	0	163.6	141.8	86.6	38	0	169.9	148.8	87.8	27	1	161.6	144.4	89.4	13	1	161.6	144.4	89.4	13	1
Thompsonville .	24.7	21.0	85.1	9	0	26.0	21.9	84.4	6	0	28.4	25.0	88.0	5	0	29.0	25.8	89.0	5	0	29.0	25.8	89.0	5	0
Oak Hill . . .	20.0	18.1	90.7	0	0	21.6	19.3	89.0	3	0	21.7	20.2	93.1	6	0	20.4	19.0	93.1	1	0	20.4	19.0	93.1	1	0

TABLE IV. — Total Enrolment, etc., by Schools, for the Year ending
July 1, 1887.

SCHOOLS.	Whole Number of Pupils enrolled.	Average Whole Number.	Average Attendance.	Percentage of Attendance.	Cases of Tardiness.	Cases of Corporal Punishment.
High	477	443.5	404.4	91.2	2,413	0
Bigelow	353	310.2	290 6	93.6	174	0
Underwood	184	165.4	144.8	88.5	267	0
Lincoln	54	44.4	39.6	88.9	51	1
Eliot	151	134.2	120.9	89.9	47	0
Jackson	251	190.1	167.5	87.7	128	6
Adams	269	227.7	212.7	92.9	80	8
Clafin	212	183.1	168 2	92.1	121	4
Pierce	232	210.6	201.6	95.6	27	22
Davis	200	163.0	152.4	93.3	83	6
Franklin	197	169.2	159.4	94.0	119	21
Barnard	126	105.3	99.1	93.4	28	5
Williams	361	303.2	278.5	91.7	240	21
Hamilton	125	103.5	98.4	94.6	127	8
Prospect	278	219.0	207.8	94.7	179	4
Hyde	245	209.8	187.3	89.2	322	23
Mason	374	265.2	242.2	91.2	442	5
Rice	183	160.0	139.2	87.1	297	2
Thompsonville . .	37	26.7	23 0	85.9	43	0
Oak Hill	28	21.6	19.5	90.2	26	2
Totals	4,337	3,655.7	3,357.1	91.3	5,214	138

TABLE V.—Number of Pupils and their Average Age, by Grades, September, 1886.

GRADES.	SCHOOLS.	I.			II.			III.			IV.			V.			VI.		
		No. of Pupils.	Yrs.	Av. Age.	No. of Pupils.	Yrs.	Av. Age.	No. of Pupils.	Yrs.	Av. Age.	No. of Pupils.	Yrs.	Av. Age.	No. of Pupils.	Yrs.	Av. Age.	No. of Pupils.	Yrs.	Av. Age.
High . . .		—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Bigelow . . .		—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Underwood . . .		42	6	0	59	7	1	65	8	11	70	9	10	48	11	8	61	12	1
Lincoln . . .		30	6	4	14	8	2	—	—	—	—	—	—	—	—	—	—	—	—
Eliot . . .		—	—	—	—	—	—	—	—	—	45	10	8	43	12	6	23	12	5
Jackson . . .		88	6	4	61	8	5	54	9	9	—	—	—	—	—	—	—	—	—
Adams . . .		36	6	5	26	7	9	42	9	2	21	10	2	28	11	1	20	12	3
Clafin . . .		26	6	2	15	7	10	33	9	0	30	9	11	24	11	4	18	12	2
Pierce . . .		—	—	—	—	—	—	—	—	—	—	—	—	15	10	8	75	14	1
Davis . . .		38	6	1	46	7	5	30	8	6	32	9	6	23	9	10	—	—	—
Franklin . . .		51	6	9	34	8	6	20	8	8	24	10	5	48	11	3	—	—	—
Barnard . . .		27	5	11	19	7	11	21	8	10	25	9	11	14	10	6	—	—	—
Williams . . .		64	6	6	31	7	5	47	8	11	48	10	0	45	11	7	35	13	1
Hamilton . . .		14	5	7	19	6	4	14	8	10	12	9	5	14	10	7	15	11	4
Frospect . . .		32	5	7	22	6	6	17	8	1	32	9	7	32	10	1	19	10	6
Hyde . . .		33	5	7	22	7	7	15	8	5	33	9	4	28	11	9	25	12	3
Mason . . .		—	—	—	—	—	—	—	—	—	55	9	11	71	10	9	44	11	9
Rice . . .		57	5	9	50	7	6	57	8	6	—	—	—	—	—	—	—	—	—
Thompsonville . . .		20	5	6	9	7	8	—	—	—	—	—	—	—	—	—	—	—	—
Oak Hill . . .		1	5	5	7	7	2	—	—	—	10	10	10	3	12	2	4	12	0
Totals . . .		559	5	11	434	7	7	415	8	10	437	9	11	436	11	1	339	12	2

TABLE V. (Concluded). — Number of Pupils and their Average Age, by Grades, September, 1886.

GRADES.	VII.			VIII.			IX.			X.			XI.			XII.			XIII.			Total Number of Pupils.
	No. of Pupils.	Yrs.	Av. Age.	No. of Pupils.	Yrs.	Av. Age.	No. of Pupils.	Yrs.	Av. Age.	No. of Pupils.	Yrs.	Av. Age.	No. of Pupils.	Yrs.	Av. Age.	No. of Pupils.	Yrs.	Av. Age.	No. of Pupils.	Yrs.	Av. Age.	
High . . .	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	461
Bigelow . .	63	12	6	41	13	5	37	14	6	—	14	10	125	16	1	113	17	—	69	17	3	320
Underwood .	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	166
Lincoln . .	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	44
Eliot . . .	20	13	5	12	14	3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	143
Jackson . .	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	203
Adams . . .	26	13	3	12	14	5	24	14	10	—	—	—	—	—	—	—	—	—	—	—	—	235
Clafin . . .	16	12	7	17	14	0	5	13	11	—	—	—	—	—	—	—	—	—	—	—	—	184
Pierce . . .	48	12	8	42	13	7	35	15	0	—	—	—	—	—	—	—	—	—	—	—	—	215
Davis . . .	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	169
Franklin . .	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	177
Barnard . .	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	106
Williams . .	20	13	5	18	14	8	15	14	9	—	—	—	—	—	—	—	—	—	—	—	—	323
Hamilton . .	12	12	11	5	13	9	6	13	5	—	—	—	—	—	—	—	—	—	—	—	—	111
Prospect . .	25	12	8	14	13	4	20	13	9	—	—	—	—	—	—	—	—	—	—	—	—	213
Hyde . . .	14	12	8	17	13	6	15	14	4	—	—	—	—	—	—	—	—	—	—	—	—	202
Mason . . .	54	12	4	38	14	0	26	14	1	—	—	—	—	—	—	—	—	—	—	—	—	288
Rice . . .	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	164
Thomps'ville,	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	29
Oak Hill . .	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	26
Totals . . .	298	12	10	218	13	9	183	14	3	154	14	10	125	16	1	113	17	1	69	17	3	3,779

TABLE VI.—Annual Enrolment in each Grade in September, 1880-86.

DATE.	GRADES.													Total.
	I.	II.	III.	IV.	V.	VI.	VII.	VIII.	IX.	X.	XI.	XII.	XIII.	
September, 1880,	464	372	376	321	296	342	260	221	162	104	97	60	43	3,118
September, 1881,	530	386	381	394	270	312	311	211	159	114	58	77	37	3,231
September, 1882,	510	436	405	353	403	237	266	225	180	104	92	51	49	3,311
September, 1883,	514	454	436	398	369	298	210	183	166	125	78	70	40	3,341
September, 1884,	605	467	436	412	411	315	260	185	165	145	113	77	54	3,645
September, 1885,	590	425	425	469	401	337	256	243	140	140	131	92	61	3,703
September, 1886,	559	434	415	437	436	339	298	218	183	154	125	113	69	3,780

TABLE VII. — Percentage of the Total Annual Enrolment in each Grade in September, 1880-86.

DATES.	GRADES.													Total.
	I.	II.	III.	IV.	V.	VI.	VII.	VIII.	IX.	X.	XI.	XII.	XIII.	
September, 1880,	14.9	11.9	12.1	10.3	9.5	11.0	8.3	7.1	5.2	3.3	3.1	1.9	1.4	100
September, 1881,	16.4	11.9	11.8	12.2	8.4	9.7	9.6	6.5	4.6	3.6	1.8	2.4	1.1	100
September, 1882,	15.4	13.2	12.2	10.7	12.2	7.2	8.0	6.8	5.4	3.1	2.8	1.5	1.5	100
September, 1883,	15.7	13.6	13.1	11.9	11.0	8.8	6.3	5.2	5.0	3.7	2.4	2.1	1.2	100
September, 1884,	16.6	12.8	12.0	11.3	11.3	8.6	7.1	5.1	4.5	4.0	3.1	2.1	1.5	100
September, 1885,	15.9	11.5	11.5	12.6	10.8	9.0	6.9	6.6	3.8	3.8	3.5	2.5	1.6	100
September, 1886,	14.8	11.2	11.0	11.6	11.5	9.0	7.9	5.8	4.8	4.1	3.5	3.0	1.8	100

TABLE VIII.—Distribution of Pupils in High School by Grades and Courses of Studies.

GRADES.	GENERAL.		CLASSICAL.		MERCANTILE.		INSTITUTE.		SPECIAL.		TOTAL.		Total.
	Boys.	Girls.	Boys.	Girls.	Boys.	Girls.	Boys.	Girls.	Boys.	Girls.	Boys.	Girls.	
X.	3	38	15	7	2	0	6	0	1	3	27	48	75
XI.	21	48	19	12	0	0	11	0	0	2	51	62	113
XII.	26	45	29	13	4	1	9	0	0	1	68	60	128
XIII.	10	28	42	26	21	11	15	5	0	0	88	70	158
Totals. . . .	60	159	105	58	27	12	41	5	1	6	234	240	474

HIGH SCHOOL GRADUATES.

FOUR YEARS' COURSE.

CLASSICAL.

FORREST N. ADAMS.
THOMAS G. ADAMS.
MARIANA W. BLOOD.
HERBERT M. CHASE.
CORA S. COBB.
ARTHUR S. COOLEY.
WILLIAM K. DENISON.
JOHN M. W. FARNHAM.
HARRY N. GAY.

FREDERICK H. HITCHCOCK.
EMMA L. NICKERSON.
FLORENCE H. PAUL.
HELEN R. RICE.
MAY M. SMITH.
CHARLOTTE SPURR.
GEORGE S. STEWART.
HERBERT K. STILES.
GRACE WESTON.

ROBERT S. WOODWORTH.

GENERAL.

GRACE ALLEN.
CARRIE L. BARCOCK.
CHARLOTTE BALLOU.
LAURA W. BALLOU.
EUGENE K. BIGELOW.
ANNIE B. BLACKWELL.
CARRIE BLODGETT.
GEORGE M. BRIDGES.
GERTRUDE BRIGGS.
MARY B. CALDWELL.
AGNES G. CHASE.
ALICE S. CLEMENT.
GRACE T. COLBURN.
EUGENE A. CROCKETT.
ANNIE A. EARLY.
EDITH A. ELLIS.
ADALINE E. FROST.
CAROLINE GOODYEAR.
HENRIETTA F. GREENWOOD.
FREDERIC S. HOLLIS.
GEORGE A. HOLMES.

MARY F. HOMER.
JAMES FREDERICK HOPKINS.
SARAH S. HUNT.
ISABELLE V. JACKSON.
EDITH K. JONES.
ROSE F. KEMPTON.
ADELAIDE F. LECOMPTE.
MARION E. MARSH.
MARY M. MORSE.
ERNEST NICKERSON.
ARTHUR W. PIERCE.
HERBERT S. POTTER.
SARAH B. RICE.
EDWIN T. ROLLINS.
WILLARD E. RYDER.
NELLIE E. SCALES.
MARY J. SCOTT.
ROBERT S. SHEDD.
SARAH S. SOUTHWORTH.
FANNIE L. STOWELL.
DORA L. STUART.

ELIZABETH F. TAAFFE.

THREE YEARS' COURSE.

CHARLES R. BROWN.
CARL H. BUNKER.
FRANCES E. BURNS.
LILLIAN P. COFFIN.
LIZZIE E. DAVIS.
LUCY W. DAVIS.
JULIA A. HENNESSY.
FLORENCE J. HILDRETH.
ARTHUR HOWLAND.
FRANK C. HYDE.

GEORGE M. LEPPER.
ELIZA MACADAMS.
ESTHER R. McDONALD.
JOHN J. McGRATH.
MARIA M. MAYNARD.
WILLIAM F. O'CONNOR.
NETTIE A. SEARS.
FRANK E. SOULE.
HENRY I. WAITE.
MAURICE H. WILDES.

SCHOOLS AND TEACHERS.

HIGH SCHOOL.

MASTER.

EDWARD H. CUTLER Washington Street, Newton

ASSISTANTS.

EZRA W. SAMPSON Washington Street, Newtonville
S. WARREN DAVIS River Street, West Newton
CAROLINE SPEAR Walnut Park, Newton
S. ALICE WORCESTER Highland Avenue, Newtonville
M. ABBY SMITH Prescott Street, Newtonville
MAYBELL P. DAVIS Walnut Street, Newtonville
EVELYN RICH Walnut Street, Newtonville
S. ALICE RANLETT Central Street, Auburndale
Mrs. LIDA P. UNDERHILL Washington Street, Newtonville
EMMA F. JOHNSON Newtonville Avenue, Newtonville

SPECIAL TEACHERS.

Military Drill.

FRANK N. BROWN Sumner Street, Newton Centre

Calisthenics and Elocution.

JENNIE E. IRESON No. 185 West Canton Street, Boston

BIGELOW SCHOOL.

[Roman numerals indicate grades.]

MASTER.

H. CHAPIN SAWIN, IX. Maple Place, Newton

FIRST ASSISTANT.

Mrs. MARTHA M. BAKEMAN, VIII., No. 662 Shawmut Avenue, Boston

ASSISTANTS.

ANNIE E. GEORGE, VII. Maple Place, Newton
 S. LOUISE SHELTON, VI., VII. Bennington Street, Newton
 AUGUSTA A. LENTELL, VI. Pearl Street, Newton
 EMILY J. DYER, V. Newtonville Avenue, Newton
 MARY R. PUTNEY, IV. Maple Place, Newton
 ELIZABETH AYLES, IV. Webster Street, West Newton

UNDERWOOD SCHOOL.

FIRST ASSISTANT.

CHARLOTTE E. SEWALL, III. Myrtle Street, Winchester

ASSISTANTS.

ADA L. DONKIN, II., III. Brook Street, Newton
 ANNIE L. WOOD, I., II. Centre Street, Newton
 JOSEPHINE W. LITTLEFIELD, I. Richardson Street, Newton

LINCOLN SCHOOL.

FIRST ASSISTANT.

Mrs. NELLIE B. RAND, I., II. Mt. Vernon Street, West Newton

ELIOT SCHOOL.

MASTER.

GEORGE G. EDWARDS, VII., VIII. Boyd Street, Newton

FIRST ASSISTANT.

H. AUGUSTA MILLARD, VI. Lowell Street, Newtonville

ASSISTANTS.

Mrs. LOUISE W. CLELLAND, V. . . Watertown Street, Watertown
 ELLEN B. PRIME, IV. Maple Place, Newton

JACKSON SCHOOL.

FIRST ASSISTANT.

ELIZA J. LOVELY, III. Gardner Street, Newton

ASSISTANTS.

MARY A. WELLINGTON, II., III. . . Webster Street, West Newton
 ROSE A. HARKINS, II. Washington Street, Newton
 GERTRUDE G. TEWKSBURY, I. . . Walnut Street, Newtonville
 LOTTIE E. STEARNS, I. Watertown Street, Nonantum

ADAMS SCHOOL.

MASTER.

WILLIAM A. SPINNEY, VIII., IX. . Webster Street, West Newton

FIRST ASSISTANT.

V. E. Hapgood, VI., VII. Prescott Street, Newtonville

ASSISTANTS.

ABBIE I. FISKE, IV., V. Prescott Street, Newtonville
 ESTELLA M. HAYNES, III. . . . No. 331 Columbus Avenue, Boston
 CLARA M. FOX, I., II. Kilby Street, Woburn
 ANGELIA A. SMITH, I. Prescott Street, Newtonville

CLAPLIN SCHOOL.

MASTER.

HERBERT F. SYLVESTER, VIII., IX. . Bowers Street, Newtonville

FIRST ASSISTANT.

CARRIE H. RUGG, VI., VII. . . . Sumner Street, Newton Centre

ASSISTANTS.

ELLEN M. HARRIGAN, IV., V. . . . Bowers Street, Newtonville
 ELLEN S. TEWKSBURY, III., IV. . . . Walnut Street, Newtonville
 LYDIA A. BRIERLEY, I., II., Washington Street, Newton Lower Falls

PIERCE SCHOOL.

MASTER.

LEVI F. WARREN, IX. Otis Street, West Newton

FIRST ASSISTANT.

Mrs. SARAH A. WARREN, VIII. Otis Street, West Newton

ASSISTANTS.

M. ALICE WARREN, VII. Otis Street, West Newton
 ANNIE C. MERRITT, VI., VII. . . . Prescott Street, Newtonville
 ELIZA E. SIMMONS, V., VI. Henshaw Street, West Newton

DAVIS SCHOOL.

FIRST ASSISTANT.

ELLA G. BATES, IV., V. Chestnut Street, West Newton

ASSISTANTS.

HELEN S. TOLMAN, III., VI. . . . Washington Street, West Newton
 LUCINDA W. SMITH, II. Crescent Street, Waltham
 SARAH E. FOSTER, I. Elm Street, West Newton

FRANKLIN SCHOOL.

FIRST ASSISTANT.

ELIZABETH F. PADDOCK, V. River Street, West Newton

ASSISTANTS.

LULU M. BAGLEY, III., IV.. . . . Waltham Street, West Newton
 CLARA H. THOMPSON, II. Webster Park, West Newton
 MARGARET A. MAGUE, I. Auburndale Avenue, West Newton

BARNARD SCHOOL.**FIRST ASSISTANT.**

CALISTA S. WOOD, IV., V. . . . Highland Street, West Newton

ASSISTANTS.

SUSAN E. COPELAND, II., III. . . Highland Street, West Newton

Mrs. LIZZIE F. JONES, I. . . . Lake Street, Waltham

WILLIAMS SCHOOL.**MASTER.**

JOHN O. GODFREY, VIII., IX. No. 4 Winthrop Street, East Boston

FIRST ASSISTANT.

ELIZABETH A. PINNOCK, VI., VII. . . Grove Street, Auburndale

ASSISTANTS.

HARRIETTE S. BATCHELDER, V., VI. . Hancock Street, Auburndale

CAROLINE Y. WENTWORTH, IV., V. . Hancock Street, Auburndale

DORA A. ALLEN, III., IV. . . . Washington Street, West Newton

HATTIE A. INGRAHAM, II., III. . . West Central Street, Natick

BELL M. HALL, I., II. . . . Grove Street, Auburndale

ANN B. SMITH, I. . . . South Main Street, Natick

HAMILTON SCHOOL.**MASTER.**

LUTHER E. LELAND, } V., VI., VII., VIII., IX.

Mrs. ELLEN M. LELAND, } Cor. Beacon Street and Washington Street,
Woodland.

FIRST ASSISTANT.

ANNA G. SWAIN, III., IV. . . . Grove Street, Newton Lower Falls

ASSISTANT.

HILMA M. EKMAN, I., II. . . . No. 55 Bickford Street, Roxbury

PROSPECT SCHOOL.**MASTER.**

CHARLES E. HUSSEY, VIII., IX. . High Street, Newton Upper Falls

FIRST ASSISTANT.

MARTHA L. PERKINS, VI., VII. Rockland Place, Newton Upper Falls

ASSISTANTS.

ELLA F. CROOKER, V. . . . No. 70 L Street, South Boston

LUCY A. HAYWARD, IV. . . . High Street, Newton Upper Falls

LIZZIE W. EVERETT, II., III. . . High Street, Newton Upper Falls

MRS. MARY P. FANNING, I., Cor. Spring and Summer streets, Newton
Upper Falls.

HYDE SCHOOL.**MASTER.**

GEORGE A. MOORE, VIII., IX. . Floral Avenue, Newton Highlands

FIRST ASSISTANT.

CHARLOTTE E. CAMERON, VI., VII., Lincoln Street, Newton Highlands

ASSISTANTS.

BLANCHE G. WETHERBEE, V., VI., Bowdoin Street, Newton Highlands

GERTRUDE BLACKMAR, IV. . . Bowdoin Street, Newton Highlands

N. GRACE GOULD, II., III. . . . No. 29 Union Park, Boston

PHEBE E. CHURCHILL, I. . . . Hartford Street, Newton Highlands

MASON SCHOOL.**MASTER.**

ALBERT L. HARWOOD, VIII, IX. . . Beacon Street, Newton Centre

FIRST ASSISTANT.

ELLEN S. BAKER, VII., VIII. . . . Station Street, Newton Centre

ASSISTANTS.

GEORGIA BUCKNAM, VII.	. . .	Station Street, Newton Centre
MARIA F. WOOD, VI.	. . .	Homer Street, Newton Centre
MARY TENNEY, V.	. . .	No. 378 Tremont Street, Boston
ROBERTA J. HARDIE, IV., V.	. . .	Central Avenue, Needham
MARY E. MASON, IV.	. . .	Sumner Street, Newton Centre

RICE SCHOOL.

FIRST ASSISTANT.

MYRA A. WILSON, III.	. . .	Sumner Street, Newton Centre
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ASSISTANTS.

MARGARET MARTIN, II., III.	. . .	Centre Street, Newton Centre
ADDIE L. THOMPSON, I., II.	. . .	Pleasant Street, Newton Centre
ELLEN M. COOK, I.	. . .	Pelham Street, Newton Centre

THOMPSONVILLE SCHOOL.

FIRST ASSISTANT.

HELEN A. DAVIS, I., II.	. . .	Beacon Street, Newton Centre
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OAK HILL SCHOOL.

FIRST ASSISTANT.

LOUISE N. BURBANK, I., II., IV., V., VI., VIII.	. . .	Dedham Street, Oak Hill
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SPECIAL TEACHERS.

MUSIC.

HORACE M. WALTON	. . .	Jefferson Street, Newton
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DRAWING AND WRITING.

Mrs. EMMA F. BOWLER	. . .	Spring Hill, Somerville
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SEWING.

JULIA GRANT	Washington Street, Newton
Mrs. ELLEN L. BOND	Paul Street, Newton Centre
SARAH L. DIX	.	.	.	.	.	Fuller Street, West Newton

UNASSIGNED TEACHERS.

MARY NOBLE .	.	.	.	.	.	Prescott Street, Newtonville
MARY E. WALL	Hancock Street, Auburndale

TRUANT OFFICER.

MARTIN C. LAFFIE	Carleton Street, Newton
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INDEX.

	PAGE
ORGANIZATION OF THE SCHOOL COMMITTEE	3-6
REPORT OF SCHOOL COMMITTEE	9-16
SECRETARY'S REPORT	17, 18
SUPERINTENDENT'S REPORT	19-48
Statistics	39-48
HIGH SCHOOL GRADUATES	49
SCHOOLS AND TEACHERS	50-57

City of Newton.

REPORT

OF THE

WATER BOARD

For the Year ending December 31, 1887.



BOSTON :

PRESS OF RAND AVERY COMPANY.

1888.

THE NEWTON WATER WORKS.

Organization for 1888.

WATER BOARD.

EDWARD W. CATE, *President.*

FRANCIS A. DEWSON.

Dr. CHARLES FRED. CREHORE.

Alderman GEORGE PETTEE.

Councilman EDMUND T. WISWALL.

ALBERT S. GLOVER . . . *Water Registrar, and Clerk of Board.*

ALBERT F. NOYES *Engineer of Board.*

H. NELSON HYDE, Jun. *Superintendent.*

J. CLIFTON WHITNEY *Inspector of Meters and Fixtures.*

PAST BOARDS OF GOVERNMENT OF THE NEWTON WATER DEPARTMENT.

CONSTRUCTING COMMISSION.

1875-1878.

Hon. R. M. PULSIFER. Col. F. J. PARKER. Hon. R. R. BISHOP.

WATER COMMITTEES OF CITY COUNCIL.

1878.

Aldermen OTIS PETTEE and E. W. WOOD.

Councilmen J. WESLEY KIMBALL, NATHAN MOSMAN and G. E. PIKE.

1879.

Aldermen G. D. ELDREDGE and E. R. SECCOMB.

Councilmen J. WESLEY KIMBALL, NATHAN MOSMAN and EDWARD
SAWYER.

1880.

Aldermen WILLIAM P. ELLISON and J. WESLEY KIMBALL.

Councilmen NATHAN MOSMAN, GEORGE E. WALES and E. W. CATE.

1881.

Aldermen WILLIAM P. ELLISON and J. WESLEY KIMBALL.

Councilmen NATHAN MOSMAN, E. W. CATE and H. A. INMAN.

1882.

Aldermen E. W. CATE and J. WESLEY KIMBALL.

Councilmen DAVID T. BUNKER, ALSON A. SMITH and FRED. W.
FREEMAN.

WATER BOARDS.

1883.

EDWARD W. CATE, FRANCIS J. PARKER, FRANCIS A. DEWSON,
Alderman J. WESLEY KIMBALL, Councilman FRED. W. FREEMAN.

1884.

EDWARD W. CATE, FRANCIS J. PARKER, FRANCIS A. DEWSON,
Alderman NOAH W. FARLEY, Councilman ALBERT F. UPTON.

1885.

EDWARD W. CATE, FRANCIS A. DEWSON, CHARLES FRED. CREHORE,
Alderman NOAH W. FARLEY, Councilman ALBERT F. UPTON.

1886.

EDWARD W. CATE, FRANCIS A. DEWSON, CHARLES FRED. CREHORE,
Alderman GEORGE PETTEE, Councilman GEORGE D. DIX.

1887.

EDWARD W. CATE, FRANCIS A. DEWSON, CHARLES FRED. CREHORE,
Alderman GEORGE PETTEE, Councilman GEORGE D. DIX.

REPORT OF NEWTON WATER BOARD.

WATER BOARD OFFICE, CITY HALL,
WEST NEWTON, Jan. 27, 1888.

TO HIS HONOR THE MAYOR AND CITY COUNCIL OF THE CITY OF
NEWTON.

THE Water Board begs leave to present the following report of its transactions during the year ending Dec. 31, 1887.

The Board reported in January, 1887, that the work of the department during the year 1886 had much exceeded that of any previous year; and at that time it was hardly supposed that the work performed during 1887 would exceed, even if it equalled, that of 1886. Contrary to expectation, however, the work of the department greatly increased during the year just ended, the demand both for the extension of main pipe and for new services being exceptionally large. The weather of the late fall and early winter was exceedingly propitious, and enabled the department to continue its work until almost the close of the year without interference from snow or frost. The length of main pipe laid during the year 1886 was 22,164 feet, or a little over four miles; while the length laid in the year 1887 was 32,054, or a little over six miles, which was nearly half as many miles as were laid during the same period in the city of New York.

The 32,054 feet of main pipe laid in the year 1887 were divided among the different sized pipe as follows:—

12 inch	.	.	.	.	.	.	.	2,228
8 "	.	.	.	.	.	.	.	6,111
6 "	.	.	.	.	.	.	.	20,927
4 "	.	.	.	.	.	.	.	2,788

It is with considerable satisfaction that the Board is able to report that several sections of the city, which greatly needed the introduction of pure water for sanitary reasons, have been piped during the past year. Over two miles of pipe have been laid in such sections, and the introduction of water to these neighborhoods will undoubtedly contribute very materially to the maintenance of the city's good health record.

SUPPLY AND SERVICE PIPES.

In addition to the main pipe previously mentioned, the department laid 7 supply pipes measuring 2,031 feet, and 335 service pipes measuring 16,438 feet, of which 15,310 feet were lead pipe, and 1,128 feet iron pipe. The number of service pipes laid during the year exceeded by 37 the number laid during the year 1886.

The Board has adopted the rule of laying only lead pipe in that portion of the services which is laid at the expense of the city, and also in that portion which is laid at the expense of the water-taker when the work is performed by the city. The water-taker, however, still has the right to decide upon the kind of pipe to be used upon his own grounds. In the great majority of instances lead pipe has been selected, as shown by the fact, that, of the 337 services laid, 298 were of lead pipe and only 37 of iron pipe.

METERS.

At the close of the year 1886 there were in use on the works 1,073 meters, and about 500 additional meters had been set ready for use upon the first of the following March, when the provisions of the new water ordinance, which requires all service pipes supplying other fixtures than ordinary faucets for domestic use to be metered, went into effect.

From the first day of January to the thirty-first day of December, 1887, 781 more meters were set; and the total number in use at the close of the year was 2,370, of which 1,070 belong to individuals, and 1,300 are the property of the city.

At present it is almost impossible to judge of the result of so general a use of meters as is contemplated by the present water ordinance. One of the reasons for adopting the system was that it would undoubtedly prevent the wasting of water, or, more strictly speaking, the using of water at times and in amounts not contemplated when the schedule rates were established.

Most of the waste takes place during the very hot weather, when the ground is parched, and the many lawns throughout the city are dried up. The year 1887, however, was exceptionally free from drought, and showers and rain-storms were so frequent as to do away with any necessity for the extensive use of garden hose; and, as a consequence, the season did not afford any test of the efficiency of the system to prevent waste.

As the system has been in operation only a portion of a year, there are no means at hand for comparing the income

received under the present plan with the income received under the system formerly in use, or of judging what is the ratio between the income received and the cost of production in the one case, as compared with the ratio of income to cost in the other. It is worthy of note, however, that although the past year was certainly unfavorable to consumption of water, the income of the department has not fallen off materially, although this was anticipated, but in reality has considerably increased if we credit to the past year the amount which was actually earned during that time.

The Board believes that at the end of another year it will be able to report such facts as will show conclusively that the meter system is not only the most equitable, but is also financially the best.

WATER ORDINANCE.

His Honor the Mayor, in his inaugural address, recommended that the beginning of the water year should be changed from the first of March to the first of January, so that the water year should be coincident with the financial year of the city.

This change would undoubtedly be wise; but, if made, it could not well go into effect before the beginning of 1889, as, to bring it about, it would be necessary to change the water ordinance, and before this could be done, and all other necessary changes made, it would be the first of March.

In this connection it is not out of place to say that the water ordinance has never been entirely satisfactory to the Board; and, if it is to be changed in any respect, it would in its opinion be wise to change it in a number

of others, so that it shall more nearly effect what the Board deems best for the department.

ADDITIONAL SUPPLY.

The wells driven during the year 1886 in the land at the rear of the pumping station have furnished about 150,000 gallons of water daily to our supply. This amount flows by means of gravity only into the pump-well. During the past year, there has been no occasion to further test their capacity; and the only means at hand by which to judge of their total capacity is the test made at the time of accepting them from the contractors, when they showed at the end of thirty days a yield of 283,000 gallons per twenty-four hours.

A question which has been much mooted among engineers, and has been more or less considered by the Board, is whether wells driven under conditions similar to those existing at our pumping station really add to the supply any thing more than greater facility in obtaining it. The City Engineer, however, holds the opinion, based upon sundry experiments which he has made, that the driven wells placed upon the Newton side of the Charles River do draw from an entirely distinct supply of water from that drawn upon by the filter basin, and that every gallon received from the wells is so much actual addition to the city's supply.

The average daily consumption during the year 1887 was 703,702 gallons. The amount which the city is entitled to take daily is 1,500,000 gallons, but the number of gallons which is actually available during a very dry season is probably not much if any over 1,200,000 gallons. If the

average daily consumption continues to increase, and there is no reason to suppose that it will not, it is evident that before many years the city will be called upon to secure an additional supply. When this is done, it will be wise to look forward a considerable number of years, and make provision for a largely increased population. The Board has already had this matter under consideration, and will continue to prosecute its investigations, that it may be prepared with a solution of the problem presented, when the time comes for action.

In June of last year, the State Board of Health began making monthly analyses of our water supply. Samples of water were taken each month from the filter basin, reservoir, driven wells, and river. The results of these analyses have been very satisfactory, as they have shown our water supply to be exceedingly pure, and free from any contamination. Tables will be found in the appendix, giving these results in detail.

HIGH SERVICE.

The problem of high service presents more difficulties than appear upon the surface. The sections of the city which cannot be supplied at all by the present system are few and very sparsely settled. It would probably be unwise to adopt any system of high service which contemplated the supplying of these sections only, as it would simply be a temporary make-shift, and the income received from the localities supplied would undoubtedly not equal five per cent upon the outlay before the plant would be abandoned.

There are, however, quite a number of other sections of

the city at the present time supplied with water which would be greatly benefited by the introduction of the system of high service, as the fire service in these localities is very imperfect, and the domestic service would be much improved by additional pressure. The re-enforcement of the supply in these neighborhoods would, however, entail upon the city large expense, as it would probably necessitate the building of another reservoir, the obtaining of an additional supply, and the construction of another pumping plant, as the present engine, although having the capacity to pump five million gallons daily, has not the strength requisite to pump it to a higher elevation than that of the present reservoir. In the mean time the Board has under consideration all the questions involved, and undoubtedly will have formulated a plan which will meet all requirements by the time the city is called upon to establish a high service system.

CONDITION OF THE WORKS.

The works are in a generally satisfactory condition. The grounds around the pumping station and engineer's house, however, have not yet reached a state of completion. As it would call for a larger expenditure of money than the Board think it advisable for the city to make in any one year, it has been the policy of the Board not to attempt to make all the improvements upon these grounds at any one time, but rather to expend a small amount yearly, and thus gradually effect the desired end.

The steam-heating apparatus placed in the pumping station in the early part of the year has proved to be of great value. It furnishes heat both to the engine-room of the pumping station and to the house of the employees;

and besides effecting a considerable saving in fuel, has also greatly relieved the wear and tear of the larger boilers.

The reservoir and filter basin are in good order. Some few repairs will probably have to be made upon each of them during the coming year; but the defects, if any, which will have to be remedied are only those which are incident to use.

It will undoubtedly be necessary to take down and overhaul the pumping engine during the coming year. The engine has been in use some ten years without having had any substantial repairs made upon it, and it is the opinion of the pumping engineer that both the steam pistons and the plungers in the water end have become considerably worn. Just what it will be necessary to do, and what will be the expense attendant upon it, cannot be ascertained until the engine is taken down and examined.

FINANCE.

The financial showing of the department cannot but be considered satisfactory. The year previous to that in which the Board assumed charge of the works, the income of the department fell below the expenditures some \$21,000. During the last five years this deficiency has been steadily reduced, and for the year 1887 is but \$11,609.79. The Board is confident that this deficiency can be entirely eliminated in a very few years, unless some extraordinary expenditure becomes necessary. It would be more nearly if not absolutely done away with at the present time if the income from the city was assessed in the same manner as that received from individuals. There seems no good reason why the city in its corporate capacity should be charged for water in a manner different from private individuals.

The amount expended by the department for the maintenance of the works has not greatly increased during the last five years, although the work of the department has materially grown. Since January, 1883, something over eighteen miles of main pipe have been added to our system. At the close of 1882 the number of services laid was 2,581; at the close of 1887 the number laid was 3,757, an increase of nearly 1,200. The work of the department in extending the system was also largely increased year by year, and now absorbs much of the time of the officers of the department. The work in the meter department has also more than doubled in the last few years.

Despite this increase in the work of the department, the force of the department outside of laborers has not increased during the five years the Board has been in charge of the works; and it has only been by the strictest economy, and by re-arranging the system of performing the labor of the department, that the Board has been enabled to keep down the expenses, and thus gradually reduce the deficiency account.

APPENDIX.

Appended will be found a description in detail of the work performed by the department during 1887, together with tables of statistics, the new water ordinance, and the rules adopted by the Board, under said ordinance, for the government of the department.

Respectfully submitted,

THE NEWTON WATER BOARD.

By EDWARD W. CATE, *President*.

DETAILS OF EXTENSIONS MADE IN 1887.

STREET.	WARD.	LOCATION.	LENGTH OF EACH SIZE IN FEET.				Gates.	Hydrants.	Cubic Yards Rocks.
			12 inches.	8 inches.	6 inches.	4 inches.			
Allston	.	From Mt. Vernon, north,	-	-	218.10	-	1	-	-
Beacon, off	.	From Beacon, north	-	520.00	-	-	1	1	128.00
Boylston	.	Extended west	-	-	241.40	-	1	1	-
Bowdoin	.	From Forest, south	-	-	228.15	-	1	1	-
Brookside Avenue	.	Extended north	-	-	36.00	-	-	-	-
Cabot	.	From Clarendon, east	-	-	639.16	-	1	-	-
Cabot	.	From Centre, west	-	-	686.90	-	1	1	-
Central Place	.	From Central Ave., west,	-	-	-	28.00	-	-	-
Chapel	.	Extended north-west	-	-	401.00	-	-	-	-
Cherry	.	From Derby, north	-	929.40	1117.00	-	1	2	-
Cherry	.	From Derby, south	-	-	-	-	1	1	-
Cherry-street Place	.	From Cherry, west	-	-	795.66	-	1	1	-
Chester	.	Extended north	-	-	-	127.15	-	-	-
Chestnut	.	Extended south	959.00	-	-	-	-	1	66.78
Clarendon and Cabot	.	Extended east and north,	-	-	329.05	422.40	1	1	-
Columbus, off	.	From Columbus, west	-	-	54.80	248.55	1	1	-
Crafts	.	Extended north-west	-	-	216.00	-	1	1	-
Crafts	.	From Central Av., so.east,	-	-	418.30	-	1	1	-
Crafts, off	.	From Crafts, east	-	-	405.45	-	-	1	-
Crescent	.	Extended south	-	-	130.00	-	1	-	-
Curve	.	From Auburn, north	-	-	806.00	-	1	-	-
Derby	.	Extended west	-	-	1386.25	-	-	2	-
Eddy	.	Extended north	-	-	145.00	-	-	-	-
Elliot	.	Extended north	-	453.75	-	-	1	-	29.00
Farwell	.	From North, east	-	-	359.45	-	1	-	-
Faxon	.	Extended south	-	-	251.85	-	-	1	-
Forest	.	From Walnut, west	-	-	375.00	-	1	1	-

Gibbs	6	Extended south	-	187.00	9.00	-	-	76.50
Greenough	4	From Wash'gton, no.-west,	-	438.50	-	1	1	-
Grove	4	From Pine Gr. Ave., north,	-	-	-	1	1	-
Harvard and Cabot	2	Extended north	-	622.00	-	-	1	-
Hawthorne	2	Extended north	-	218.30	-	-	1	-
Hawthorne, Lincoln Ct.	2	Extended east	-	-	210.00	-	-	-
Irving	6	Extended south	-	385.00	-	-	1	172.60
Kimball Terrace	2	From Otis, south	-	-	362.70	-	-	-
Lake Avenue	6	From Moreland Ave., west,	-	216.85	-	1	1	-
Lexington, Adams Ave.	4, 3	Extended north and east.	-	1559.20	-	1	3	-
Lexington	4	Extended north-east	-	2187.00	-	2	3	-
Lincoln	5	From Woodward, west	-	-	-	1	1	-
Lincoln Court	2	From Adams, east	-	-	177.75	-	-	-
Maple, off	4	From Maple, west	-	181.28	408.97	1	-	-
Melrose	4	Extended north	-	106.65	-	-	-	-
Parker	6	From Boylston, south	-	-	-	1	1	-
Parker, off	5	From Parker, west	-	215.95	-	1	-	28.94
Pine	4	From River, west	-	939.00	-	1	1	-
Prince	3	Extended south	-	119.00	-	-	-	45.00
Rice	6	From Summer, west	-	190.00	-	-	-	-
River	3	Extended south-east	-	-	-	1	1	-
River, off	3	From River, north-east	-	889.75	-	1	1	-
Tappan Place	5	From Lincoln, north	-	290.00	-	1	-	-
Thornton, off	1	From Thornton, west	-	-	290.90	-	-	-
Walnut Terrace	2	From Central Ave., west,	-	-	237.40	-	-	-
Walnut, Grove Hill Av.	2	Extended south-west	1269.35	798.00	-	3	3	-
Waltham	3	Extended north	-	769.00	-	-	1	-
Washington, off	2	From Washington, north,	-	24.00	265.00	-	-	-
Watertown	1	Extended east	-	152.40	-	-	1	-
Watertown & Edinboro,	2	Extended west and north,	-	1198.00	-	1	1	-
Windsor	4	From Beacon, north	-	-	-	1	1	-
Total . . . . .	.	.	2228.35	20927.40	2787.82	33	42	546.82
			6110.90					

Length of main pipe laid during year 1887, 32,054 feet.

DESCRIPTION OF MAIN PIPE LAID TO DEC. 31, 1887.

DATE OF LAYING.	LENGTH OF DIFFERENT SIZES IN FEET.							TOTAL.
	24 in.	20 in.	16 in.	12 in.	8 in.	6 in.	4 in.	
Laid previous to January, 1878	761	18,012	2,457	58,932	53,321	116,815	23,235	273,533
Laid during 1878	-	-	-	-	180	8,391	2,085	10,656
Laid during 1879	-	-	-	1,083	947	13,148	3,122	18,300
Laid during 1880	-	-	-	754	1,484	9,728	4,153	16,019
Laid during 1881	-	-	-	-	484	7,449	2,483	10,416
Laid during 1882	-	-	-	-	1,211	10,416	2,605	14,232
Laid during 1883	-	-	-	1,242	2,656	7,941	3,304	14,143
Laid during 1884	-	-	-	242	-	8,951	983	10,176
Laid during 1885	-	-	-	850	2,082	11,047	3,626	17,605
Laid during 1886	-	-	-	1,187	4,213	13,938	2,826	22,164
Laid during 1887	-	-	-	2,228	6,110	20,927	2,787	32,052
Total	761	18,012	2,457	65,518	72,688	228,751	50,109	439,296

Total length of main laid to date, 439,296 feet, or 83.2 miles.

DETAILS OF SERVICES LAID IN 1887.

MONTH.	IRON PIPE.						LEAD PIPE.						TOTAL.	
	2-in.		1½-in.		1¼-in.		1-in.		¾-in.		½-in.		No.	Length in feet.
	No.	Length in feet.	No.	Length in feet.	No.	Length in feet.	No.	Length in feet.	No.	Length in feet.	No.	Length in feet.		
January .	1	-	1	-	1	-	1	37.00	1	-	2	57.00	1	36.20
February .	-	-	-	-	3	65.50	-	-	-	-	-	24.65	-	-
March .	-	-	-	-	-	-	-	-	5	278.25	2	77.00	7	355.25
April .	3	89.70	1	12.85	-	-	1	42.50	-	-	19	928.50	1	17.30
May .	4	130.90	-	-	3	49.00	1	62.20	3	238.30	24	1560.40	8	314.10
June .	7	240.35	-	-	-	15.30	-	-	6	259.50	15	1052.15	11	427.60
July .	2	53.50	-	-	1	25.30	-	25.80	5	464.30	11	753.75	3	55.90
August .	-	-	-	-	-	-	1	140.30	1	149.00	17	1128.40	15	619.85
September, 1	64.15	-	-	-	-	-	1	5.20	2	143.25	25	1341.10	23	621.05
October .	1	34.10	-	-	1	41.70	-	-	2	167.40	22	1092.75	10	431.20
November,	-	-	1	14.20	-	-	1	12.30	-	-	18	1020.40	15	553.00
December,	-	-	-	-	-	-	-	-	1	136.40	17	711.05	14	462.40
Total .	18	612.70	2	27.05	1	146.80	2	82.30	8	200.00	6	206.80	175	9948.40
													103	3615.60
													335	16457.80

Total iron, 1,128.85 feet. Total lead, 15,328.95 feet. New services, 16,457.80 feet. Renewals, 1,214.15 feet.
 NOTE. The service pipes from main to abutters' line are, in all cases, lead.

SUPPLY PIPE LAID IN 1887.

STREET.	Ward.	LOCATION.	LENGTH OF EACH SIZE IN FEET.		Gates.	Hydrants	Rock.
			2-in.	1-in.			
Beacon . . .	6	Extended west .	475.00	—	—	—	—
Carlisle . . .	6	Extended east .	163.00	—	—	—	32
Chestnut . . .	3	Extended south .	124.00	—	—	—	—
Lucas Avenue .	3	North from Wash- ington.	144.00	—	1	—	—
Off River . . .	3	Extended west .	363.00	—	—	—	—
Off Walnut . .	6	Extended west .	452.30	—	—	—	—
Off Webster . .	3	From Washington, south.	310.00	99.00	1	—	—
Total . . .	.	.	2031.30	99.00	2	—	32

NUMBER AND LENGTH OF SERVICES LAID TO DATE.

DATE OF LAYING.	Number.	Length in Feet.
Laid to January, 1878	1,497	104,065
Laid during 1878	188	15,449
Laid during 1879	232	13,670
Laid during 1880	228	18,039
Laid during 1881	267	14,675
Laid during 1882	169	10,904
Laid during 1883	159	11,709
Laid during 1884	179	12,113
Laid during 1885	215	12,367
Laid during 1886	298	14,748
Laid during 1887	335	16,457
Total	3,767	244,196

METERS SET.

The following meters were set during 1887: Crown 777, Ball & Fitz Piston 2, Spooner 2. There are now in use throughout the city 2,370 meters, 1,300 of which are owned and rented to the water-takers by the department. The meters now in use are classified as follows:—

CLASSIFICATION OF METERS IN USE.

PATTERN.	SIZES.							TOTAL.
	$\frac{1}{2}$ -in.	$\frac{5}{8}$ -in.	$\frac{3}{4}$ -in.	1-in.	$1\frac{1}{2}$ -in.	2-in.	3-in.	
Crown . .	1,732	—	20	27	2	5	1	1,787
Worthington .	—	299	6	3	—	—	1	309
Union Piston .	—	195	20	1	—	—	—	216
Union Rotary .	—	44	2	4	—	—	—	50
Desper . .	—	3	—	—	—	—	—	3
Spooner . .	—	2	1	—	—	—	—	3
Indicators . .	—	—	—	—	—	—	—	2
Total . .	1,732	543	49	35	2	5	2	2,370

WATER PUMPED AND CONSUMED.

There were pumped during 1887, 253,143,685 gallons of water, about 5,177,563 gallons in excess of the quantity pumped in 1886.

The consumption for the year averaged 703,702 gallons per day, ranging from 244,919 gallons, the minimum Sept. 6, to 1,490,652 gallons, the maximum consumption June 16. The accompanying tables show the consumption by months since 1878.

DAILY AVERAGE CONSUMPTION OF WATER FROM 1878 TO 1887, INCLUSIVE.

MONTH.	1878.	1879.	1880.	1881.	1882.	1883.	1884.	1885.	1886.	1887.
January .	286,234	309,615	386,524	406,212	445,257	526,943	449,079	532,659	533,558	619,418
February .	274,792	300,275	341,920	397,346	470,841	481,437	444,011	563,741	531,434	592,530
March .	227,484	300,048	325,996	354,168	541,149	503,804	473,193	466,218	570,673	550,902
April .	221,508	297,850	381,002	392,617	477,510	494,281	451,722	543,734	575,883	590,590
May .	294,278	388,671	514,382	466,234	510,951	568,500	502,412	566,650	645,267	763,109
June .	369,844	455,924	719,348	475,573	646,752	719,838	679,588	835,919	840,520	896,608
July .	557,446	488,733	515,623	520,529	764,985	818,209	626,404	870,227	1,052,536	905,024
August .	386,916	502,418	540,408	510,214	944,486	1,042,608	560,032	660,262	742,347	769,210
September .	374,517	387,366	530,826	550,974	712,994	882,348	663,817	673,137	716,465	760,308
October .	343,431	370,238	419,474	467,155	601,595	511,039	552,219	580,189	678,351	692,127
November .	304,208	361,446	387,683	440,689	520,945	482,570	476,116	529,666	611,504	653,907
December .	297,890	336,777	364,196	426,752	501,669	460,994	497,075	532,023	592,510	620,639
Daily average .	328,212	374,949	452,032	450,705	594,930	624,381	532,804	614,968	675,298	703,702

RECEIPTS FOR THE YEAR 1887.

Water rates	\$18,396 42
Meter rates	38,818 30
Service and meter account	5,239 58
Construction account	1,479 21
Meter rent	2,300 15
	<hr/>
	\$66,233 66

EXPENDITURES FOR THE YEAR 1887.

MAINTENANCE ACCOUNT.

Amount of appropriation	\$14,000 00	
Expense of registrar's office, including salary of registrar, inspector, travelling and miscellaneous ex- penses	\$3,406 52	
Expense of superintendent's office, including salary of superintend- ent, pipe yard and miscellaneous expenses	1,936 23	
Expense of pumping station, includ- ing salary of engineer and fire- man, fuel, repairs, etc.	5,104 11	
Expense of maintaining reservoir	501 14	
mains	601 09	
hydrants	602 76	
services	97 17	
filter basin	719 23	
stand pipes	86 21	
city teams	814 20	
	<hr/>	
<i>Amounts carried forward</i>	\$13,868 66	\$14,000 00

<i>Amounts brought forward</i> .	\$13,868 66	\$14,000 00
Expense of maintaining drinking posts	11 22	
Expense of maintaining watering troughs	4 32	
Tools	48 69	
Miscellaneous expenses	18 75	13,951 64
	<hr/>	<hr/>
Balance		\$48 36

SERVICE AND METER ACCOUNT.

Amount of appropriation		\$4,000 00
Expended for new services	\$3,021 48	
maintaining services	282 19	
maintaining meters	398 27	
maintaining city teams,	277 22	
sundries	19 63	3,998 79
	<hr/>	<hr/>
Balance unexpended		\$1 21

REBATE ACCOUNT.

Amount of appropriation		\$500 00
Expended in rebates of water rates	\$109 13	
meter rates	248 71	
service and		
meter acc't,	3 80	
meter rental	1 41	363 05
	<hr/>	<hr/>
Balance unexpended		\$136 95

CONSTRUCTION ACCOUNT.

DR.

Expended for new mains	\$42,388 17
hydrants	4,800 25
services	7,522 23
stand pipes	683 29
water gates	1,009 30
tools and repairs	824 45
gate boxes	1,233 33
meters	15,187 38
city teams	467 38
pumping station improve- ments	96 44
pumping station heating apparatus	1,421 31
additional supply	409 49
barn	761 73
drinking posts	20 54
watering troughs	200 50
meters maintenance	335 93
condensing supply	172 63
	<hr/>
	\$77,534 35

CR.

By receipts during the year	1,479 21
	<hr/>
Net expenditure during 1887	\$76,055 14
Net expenditure to Dec. 31, 1886	1,043,489 63
	<hr/>
Net expenditure to Dec. 31, 1887	\$1,119,544 77

STATEMENT OF SERVICES IN USE DEC. 31, 1887.

Number of services laid throughout the city Dec. 31, 1887	3,768
Number of services shut off for non-payment, remaining off Dec. 31, 1886	7
Number of these turned on during the past year	<u>1</u>
Leaving of these still shut off	6
Number of services shut off for non-payment during the past year	7
Number of these turned on again during the year	<u>4</u>
Leaving of these still shut off	3
Number of services shut off by request re- maining off Dec. 31, 1886	161
Number of these turned on during the past year	<u>70</u>
Leaving of these still shut off	91
Number of services shut off by request dur- ing the past year	238
Number of these turned on again during the year	<u>131</u>
Leaving of these still shut off	<u>107</u>
Number of services once turned on remain- ing off Dec. 31, 1887	207
Number of services never turned on	<u>142</u>
Total number of services remaining off Dec. 31, 1887	<u>349</u>
Leaving number of services in use Dec. 31, 1887	3,419

COMPARATIVE STATEMENT OF RECEIPTS AND EXPENDITURES FROM 1878 TO 1887.

YEAR.	EXPENDITURES.				RECEIPTS.				DEFICIT.
	Interest.	Maintenance.	Services and Meters.	Total.	WATER RATES.			Total.	
					From City.	Other Sources.			
						Services and Meters.			
1878 .	\$44,800 00	\$9,777 69	\$6,997 45	\$61,575 14	\$5,896 74	\$17,598 33	\$5,280 55	\$25,775 62	\$35,799 52
1879 .	45,500 00	8,841 20	4,860 57	59,201 77	6,132 50	21,023 02	3,138 68	30,294 20	28,907 57
1880 .	47,750 00	9,223 70	4,212 24	61,185 94	8,919 00	24,815 58	6,192 40	39,926 98	21,258 96
1881 .	48,900 00	12,682 49	4,951 20	66,533 69	8,533 18	26,953 10	5,206 48	40,692 76	25,840 93
1882 .	49,600 00	13,811 62	5,590 63	69,002 25	8,729 01	32,703 38	5,454 59	47,886 98	21,115 27
1883 .	50,900 00	16,266 01	5,498 65	72,664 66	12,851 22	36,476 73	5,727 50	55,055 45	17,609 21
1884 .	52,500 00	13,351 94	5,584 97	71,436 91	12,127 56	37,641 45	5,879 38	55,648 39	15,788 52
1885 .	53,100 00	12,873 49	6,471 25	72,444 74	14,278 89	39,567 77	5,471 52	59,318 18	13,126 56
1886 .	54,380 00	12,986 51	5,998 86	73,365 37	11,177 00	43,183 88	6,311 50	60,672 38	12,692 99
1887 .	55,740 00	13,951 64	3,998 79	*74,053 48	14,301 29	42,947 76	5,194 64	62,443 69	11,609 79

* Rebates, \$363.05.

*

WATER ANALYSES BY STATE BOARD OF HEALTH.
Charles River. (Parts in 100,000.)

No.	DATE OF COLLECTION.		APPEARANCE.		ODOR.		RESIDUE ON EVAPORATION.				AMMONIA.			Nitrites & Nitrates.	Nitrites.	REMARKS.
	Collection.	Examination.	Turbidity.	Color.	Cold.	Hot.	Total.	Loss on Ignition.	Fixed.	Odor on Ignition.	Free.	Album. Inhold.	Chlorine.			
40	June 6 | 7		Very slight; very little sediment.	1.0	Slight.	Slight.	5.95	1.92	4.03	Peaty.	.0020	.0036	—	—	—	Taken from Charles River at P. S. 10' from shore, just below surface, by F. J. Stearns.
272	July 6 | 7		Slight; some brown floccy sediment.	0.7	Decided strawlike.	Decided strawlike.	5.04	1.62	3.45	Strongly peaty.	.0004	.0202	.38	.000	None.	Taken from river near middle of stream, by A. L. Woodruff.
504	Aug. 8 | 9		Clear; a little brown sediment.	1.0	Very faintly mouldy.	Somewhat stronger.	5.60	1.80	3.80	Peaty.	.0008	.0249	.38	.000	—	Taken from river near Pumping Station, by A. F. Noyes.
726	Sept. 9 | 10		Slight; very little sediment.	0.7	Faintly strawlike.	Slightly wooden.	5.62	1.40	4.22	Peaty, somewhat disagreeable.	.0011	.0307	.43	.007	—	Same as preceding, by A. F. Noyes.
929	Oct. 10 | 12		Very slight; no sediment.	0.4	Faintly strawlike.	Faintly wooden and mouldy.	5.30	1.25	4.05	Peaty.	.0000	.0208	.50	.005	None.	Same as preceding, by A. L. Woodruff.
1,123	Nov. 8 | 9		Slight; a little floccy sediment.	0.6	Faintly mouldy.	Distinctly mouldy and musty.	5.65	0.95	4.70	Peaty.	.0004	.0242	.62	.008	None.	Same as preceding, by I. W. Hastings.
1,364	Dec. 8 | 9		Slight; very little light sediment.	0.7	Faintly strawlike and mouldy.	Distinctly musty and somewhat disagreeable.	6.20	1.80	4.40	Peaty.	.0004	.0240	.56	.018	None.	Same as preceding, by I. W. Hastings.

Filter Gallery — Pump Well.

39	June 6 | 7	Slight; no sediment.	0.0	None.	4.75	0.77	3.98	Peaty white residue.	.0002	.0100	.42	-	-	Taken from pump-well, grade 87.5 in filter basin, by F.P. Stearns.
271	July 6 | 7	Very slight; a slight sediment.	0.0	Slightly offensive.	4.80	0.75	4.05	Peculiar white residue.	.0012	.0046	.37	.003	Pre- sent.	Taken from filtering basin, by A. L. Wood- ruff.
504	Aug. 8 | 9	Clear; a very little sedi- ment.	0.0	Very faintly disagreeable.	4.92	0.77	4.15	Peaty.	.0007	.0094	.34	.000	None.	Same, by A. F. Noyes.
727	Sept. 9 | 10	Slight; some sedi- ment.	0.0	Peculiar.	4.87	0.82	4.55	Slightly peaty and disagreeable.	.0000	.0096	.36	.007	-	Same, by A. F. Noyes.
930	Oct. 10 | 12	Very slight; no sedi- ment.	0.0	Very faint or none.	5.05	0.45	4.60	None; white residue.	.0010	.0054	.36	.005	None.	Same, by A. L. Wood- ruff.
1,124	Nov. 8 | 9	Very little flocky sedi- ment.	0.0	Very faintly mouldy.	5.05	0.55	4.40	Faintly peaty.	.0000	.0070	.39	.005	None.	Same, by I. W. Hast- ings.
1,366	Dec. 8 | 9	Clear; very little flocky sediment.	0.0	Faintly mouldy.	5.35	0.30	4.45	Faintly acid.	.0006	.0030	.40	.008	None.	Same, by I. W. Hast- ings.

Driven Wells.

52	June 7 | 8	Clear; very few flocks, no sediment.	0.0	None.	7.37	0.55	6.82	Very slight- ly peaty; colorless.	.0008	.0014	-	-	-	Taken from a tap from a series of driven wells at Pumping Station, by A. L. Woodruff.
273	July 6 | 7	Clear; no sediment.	0.0	None.	7.45	1.30	6.15	None; white residue.	.0000	.0002	.41	.013	-	Same place, by A. L. Woodruff.
506	Aug. 8 | 9	Clear; no sediment.	0.0	None.	7.12	0.55	6.57	Very faint.	.0000	.0007	.29	.022	None.	Same place, by A. F. Noyes.
729	Sept. 9 | 10	Clear; no sediment.	0.0	None.	7.30	0.55	6.75	Slightly peaty, dis- agreeable and acid.	.0000	.0002	.38	.013	Very faint.	Same.

WATER ANALYSES OF STATE BOARD OF HEALTH — *Concluded.*
Distributing Reservoir. (Parts in 100,000)

No.	DATE OF COLLECTION.	APPEARANCE.		ODOR.		RESIDUE ON EVAPORATION.				AMMONIA.		Chlorine.	Nitrogen as Nitrates.	Nitrates.	REMARKS.
		Turbidity.	Color.	Cold.	Hot.	Total.	Loss on Ignition.	Fixed.	Odor on Ignition.	Free.	Albuminoid.				
51	June 7 | 8	Clear; very few flocks, no sediment.	0.0	Very faint.	The same.	4.72	0.97	3.75	Irritating colorless residue.	.0014	.0103	.35	.000	None.	Taken from the gate-house at reservoir, by A. L. Woodruff.
270	July 6 | 7	Slight; slight, white sediment.	0.0	None; becomes offensive on standing.	Very faint.	4.70	0.45	4.25	Faintly peaty, white residue.	.0012	.0120	.35	.000	None.	Taken from Newton Reservoir, by A. L. Woodruff.
507	Aug. 8 | 9	Clear; very little sediment.	0.0	Very faint.	Faintly earthy.	4.85	0.60	4.25	Peaty.	.0009	.0082	.35	.000	None.	Same as preceding, by A. F. Noyes.
728	Sept. 9 | 10	Distinct; no sediment.	0.0	Very faint or none.	Very faintly strawlike.	5.05	0.52	4.53	Offensive white residue.	.0000	.0105	.34	.007	-	Taken from Newton Reservoir, by A. F. Noyes.
981	Oct. 10 | 12	Slight; very little sediment.	0.0	Faintly strawlike.	None.	4.75	0.70	4.05	Slightly peaty.	.0012	.0106	.35	.003	None.	Same as preceding, by A. L. Woodruff.
1,125	Nov. 8 | 9	Very slight; very little white sediment.	0.0	Very faintly mouldy.	The same.	5.00	1.20	3.80	Very faintly peaty.	.0000	.0072	.36	.000	None.	Same place, just outside gate-house, by A. L. Woodruff.
1,365	Dec. 8 | 9	Very slight; some whitish floccy sediment.	0.0	Distinctly mouldy.	Very faintly mouldy.	4.95	0.85	4.10	Faintly peaty.	.0000	.0090	.39	.004	None.	Taken from reservoir, by I. W. Hastings.

CITY OF NEWTON, MASS.

ORDINANCE XX.

Relating to the Water Department.

SECTION 1. A Water Board is hereby established consisting of five persons, one of whom shall be a member of the Board of Aldermen, one a member of the Common Council, and three at large. The offices of Water Registrar and Superintendent of Water Works are hereby established.

SECT. 2. The Superintendent shall have general superintendence of the out-of-door work of the department, under the direction of the Water Board.

Whenever any repairs are made or new work done, he shall make a detailed report to the Board of the kind of work performed, where located, the amount thereof, the quantity and kind of material used therefor, to whom chargeable, and any other particulars that may be deemed desirable or necessary. He shall perform any other duties prescribed by the Water Board.

SECT. 3. The Water Registrar shall keep full, complete, and detailed records of all doings and correspondence of the Water Board, also similar records and accounts of all the work done by the officers and employees of the department, showing the kind of work done, the location and cost thereof, and the account to which it is charged.

He shall also keep a full record of the name of each water-taker, the location and description of the building in which the water is used, the character of its use, the kind of service, the quantity supplied, and the amount charged therefor, all properly arranged for convenient reference.

He shall also keep a full record of the amount of water daily pumped, consumed, and in store; and, generally, of all facts pertaining to the condition and use of the works that may be desirable for reference.

He shall perform any other duties prescribed by the Board.

SECT. 4. The Water Board shall have the general supervision and management of the water works, and shall have power to appoint, hire, dismiss, discharge, and fix the compensation of such other officers and employees of the department (except Superintendent and Registrar) as they shall deem necessary for a proper transaction of its business.

SECT. 5. The Board shall annually, in the month of January, present to the City Council a report to and including the thirty-first day of December of the preceding year, containing a full statement of the doings of the department, of the condition of the work, and such other matters as they may deem proper.

SECT. 6. The Board shall annually, in the month of September, submit to the Committee on Finance of the City Council an estimate in writing of the receipts and expenditures of the department for the ensuing year.

SECT. 7. All bills and vouchers of purchases for the department, and pay-rolls and other bills for labor, shall be approved in writing by at least three members of the Board.

SECT. 8. All books of account and records in the depart-

ment shall, at times, be open to the inspection of any committee of the City Council designated to examine them.

SECT. 9. The Board shall attach a meter to all services supplying other fixtures than faucets; also to fixtures supplying only faucets where more than three are used. The Board shall also furnish meters to all water-takers who desire to use them, regardless of the fixtures supplied.

All meters hereafter set shall be furnished, maintained, and renewed at the cost of the city, and the Board shall charge an annual' rental therefor; provided, nevertheless, that any meter injured through the negligence of a water-taker, or by frost, shall be repaired at his expense.

SECT. 10. All premises where water is taken may at any reasonable time be inspected by a properly authorized officer of the department; and full authority is hereby given to the Board to order such inspection whenever they deem it for the interests of the department that it be made.

SECT. 11. The owner and the occupant of the premises in which water is used, who fails to protect his meter from frost, or fails to keep the service pipes and fixtures in good order, and neglects to repair them in three days after they have become defective, or neglects to shut off the water to prevent waste, shall be liable to a forfeiture of two dollars; and if the forfeiture is not paid within two days after notice, the water shall be cut off and shall not be let on until the waste is stopped and the fine is paid, together with two dollars for shutting off and letting on the water.

In case of a second offence within one year the water shall be shut off, and shall not be let on except by a vote of the Board, and the payment of such forfeit, not exceeding ten dollars, as the Board may impose.

SECT. 12. Applications for service pipes shall be made upon blank forms furnished at the office of the Board; when the estimated cost of the applicant's part has been deposited, the pipes shall be laid. From the main to the street line the work shall be done at the expense of the city, the remainder at the cost of the applicant. The account shall be adjusted, and any balance paid, before the water is turned on.

SECT. 13. Extensions of main pipe shall only be made when authorized by an order of the City Council. Applications therefore must be made upon the blanks furnished by the Board, upon which shall be indorsed the estimate of the cost of the extension desired. No such application shall be considered by the Board unless accompanied by a written agreement, binding the applicant, or other responsible party, to guarantee the city annually, for at least five years, a sum equal to five per cent of the total cost of the extension. All receipts for water sold from such extension, and no other, shall be credited to the party making such guaranty as payments upon account of same.

Applications for extension of mains through private ways or grounds shall in no case be granted unless the owner thereof executes a proper instrument, securing to the city the right of permanent occupation, free from any acts of interference that shall affect the safety of the pipe, and securing to the department free right of entrance for purposes of its inspection and maintenance. Nothing in this section, however, shall be construed as affecting the right of the City Council to authorize the extension of a water main without guaranty, if, upon a vote taken by yea and nay, two-thirds of the members of each branch present and voting shall vote to do so.

SECT. 14. All bills for water, including the minimum charge for water furnished by meter, shall be payable to the Treasurer in advance, on the first day of March annually. Bills for specific supplies, or for a part of the year, and fines and penalties, shall be paid before the water is let on. Where water is supplied by meter, the excess over minimum rates shall be payable semi-annually, on the first day of March and of September, for the six months next proceeding.

SECT. 15. In every case of non-payment of the water rent for thirty days after the same is due, the Board shall cause a written demand to be left at the premises where the water is taken; and unless the rent is paid within three days thereafter, together with twenty cents for the demand, the Board shall cut off the supply. The water shall not be let on until the amount due, together with said fee, and two dollars for the shutting off and letting on, is paid, whether other persons taking water through the service pipe are delinquent or not. In every case of non-payment of water rent, the owner of the premises, whether he is the occupant or not, shall be required to pay the same, and all charges connected therewith, provided he has been duly notified of the use of water, and has made no objection.

Whenever the water is shut off by request of plumbers for the sake of making repairs, except those named in Section 11, the charge for shutting off and letting on shall be one dollar.

SECT. 16. The annual price or rent to be paid for the use of meters and for water shall be in accordance with the following schedule.

The Board is hereby authorized to make abatements and rebates in all proper cases; no special rates, however, shall be allowed. In any case not provided for by the schedule, the Board shall set a meter, and charge for the water at meter rate.

SCHEDULE OF RATES.

Dwelling Houses.

If occupied by one family, one faucet . . .	\$6 00
Each additional faucet, not exceeding two . . .	2 00
One faucet used by two or more families, each family using	4 00
Set wash-tubs, not more than three in a set, each set,	1 00

For all other fixtures, the water to be supplied through meters at following rates:—

For Consumption Averaging Daily for Six Months.

Under 3,000 gallons per day	(per thousand gal.),	35 cts.
Over 3,000 gal. and under 6 per day	“ “	30 “
“ 6,000 “ “ 10,000 “ “	“ “	21 “
“ 10,000 “ “ 20,000 “ “	“ “	19 “
“ 20,000 “ “ 30,000 “ “	“ “	15 “
30,000 gals. and over per day	“ “	12 “

(Each meter to be subject to a minimum charge of \$10.00 per annum.)

SECT. 17. Any plumber, or other person, who shall make any alteration in, or addition to, any water-pipe or fixture, except so far as a written permit therefor has been given by the Board, shall be liable to a fine not exceeding twenty dollars.

SECT. 18. Whoever opens any hydrant, or removes the cap thereof, or opens or makes any connection with the pipe or reservoir, or turns off or on the water in the pipe or reservoir, without the permission of the Board, except in case of fire, shall be liable to a penalty of not less than three, nor more than twenty dollars; provided, however, that in case of emergency the water may be turned off by any employee of the city, who shall, in such case, immediately give notice at the office of the Board.

SECT. 19. Whoever, without the authorization of the Board, fishes in the reservoir or filter basin, or discharges any gun or firearm upon the same or on the grounds connected therewith, or bathes therein, or places or uses any boat therein, or posts any bill, placard, or advertisement within the said grounds, shall be liable to a fine of not less than five nor more than fifty dollars for each offence; and the Board is hereby authorized to exclude the public from any or all grounds of the department, whenever such exclusion may be deemed by them necessary for the proper protection of the works.

SECT. 20. No water shall be sold to parties outside of the city.

SECT. 21. This amendment shall take effect, in so far as it relates to meters, on March 1, 1887; in all other respects it shall take effect upon its passage.

RULES AND REGULATIONS OF THE NEWTON WATER DEPARTMENT.

SECTION 1.

Office.

1. The office of the Water Board is hereby established in the room at City Hall now occupied by the Water Registrar.

SECTION 2.

Organization.

1. Besides the offices of Water Registrar and Superintendent established by ordinance, the permanent organization of the department shall be as follows:—

A civil engineer, an inspector of meters and fixtures, a pumping engineer, a fireman, a main-pipe foreman, a service-pipe foreman, three teamsters, and a clerk in the office of the Water Board. It is understood that the City Engineer is the civil engineer of this department.

SECTION 3.

Water Registrar.

1. The Water Registrar shall be the clerk and executive officer of the Board; all orders and communications of the Board shall be signed by, or given through, him, and shall be obeyed and respected accordingly.

2. He shall assess the water rates according to the tariff established by ordinance. He shall make out and distribute bills, exercise a constant supervision over the use of water, and attend to the enforcement of all regulations relating thereto.

3. He shall issue the orders of the Board for the laying of main and service pipe only after the requirements of the ordinance shall have been fulfilled; and in no case shall he order an extension in a private way until he has received a certificate from the City Engineer that said way is graded to proper level.

4. He shall be especially careful to see that the requirement of the ordinance regarding the pre-payment of water rates is strictly enforced, and in no event shall he order water turned on till the bill therefor shall have been paid.

5. He shall annually, on or before the first day of September, lay before the Board an estimate in detail of the appropriations required by the department, and of its income, for the next financial year.

6. He shall receive a daily report from the other officers of the department of the progress and condition of the work in their charge, and shall make a weekly report to the Board thereupon.

7. He shall keep copies or memoranda of all orders from the office and the reports of other officers closely posted up, and will be held responsible for the proper condition of the books, papers, and work of the office, as also for the due performance of the duties imposed upon him by ordinance.

SECTION 4.**Superintendent.**

1. The office of the Superintendent is hereby established at the pipe yard at Newtonville.

2. The Superintendent shall have general charge of the out-of-door work. No new work shall be undertaken by him without the order of the Board; any work of maintenance, however, necessary to be performed without delay, may be done without said order, the Superintendent immediately reporting thereon to the Registrar.

3. He shall have control of the laborers and other employees engaged upon work under his charge. He shall have power to hire and discharge day laborers, and to suspend any other of his employees, giving immediate notice of such suspension to the Board for its action.

4. He will be held responsible for the good conduct of the men under his direction, the condition of the water, of the reservoir and its grounds, of the grounds about the pumping station, the basin and grounds in Needham, the piping, gates, hydrants, and other appurtenances of the department plant, and all tools and property at the pipe yard.

5. He will be watchful to prevent or remedy any defect in a street or sidewalk resulting from the presence of main or service pipe or their appurtenances.

6. Before leaving his office he will report to the water office where he may be found while absent, and the time of his expected return.

7. He shall make daily reports to the Water Registrar of the progress and condition of work in his charge.

SECTION 5.**Inspector.**

1. The Inspector, under the charge of the Registrar, shall make inspections of the fixtures and meters in service, at such times as the Registrar shall deem expedient, and he shall, in general, act as chief assistant to the Registrar.

2. He shall have charge of testing, setting, and repairing meters, and shall keep careful record of the dates and results of all tests made; of the condition of all meters removed for repairs, both before and after repairs are made, with the date of their removal and resetting. He shall also keep a careful record of the cost of setting, repairing, inspecting, and renewing all meters, and a record showing the work performed by all meters from the date of setting, with the annual and aggregate expense of their maintenance, computed both per meter and per 100,000 feet of water registered.

3. He shall make daily reports to the Water Registrar of the condition and progress of the work under his charge.

SECTION 6.**Engineer.**

1. Upon receipt of orders therefor from the Board, the City Engineer shall, within twenty-four hours, establish lines and grades for the extension of all water-mains, and shall take such measurements of main and service pipe extensions, and their appurtenances, as will enable him to correctly locate and plat the same; he shall keep the returns from the pumping engineer closely posted up, and shall plat therefrom a diagram showing the engine duty.

2. He shall make a daily report to the Water Registrar of the progress and condition of the work under his charge.

3. He shall perform such other duties as the Board may from time to time by vote require of him.

SECTION 7.

Pumping Engineer.

1. The pumping engineer shall be held responsible for the good condition of the pumping station, machinery, fixtures, furniture, tools, and other property of the department therein contained.

2. It shall be his personal duty to keep the engines, pumps, and engine-room in a neat and proper condition.

3. He shall be entitled to one day's leave of absence in each week, provided such absence will not interfere with the proper prosecution of the work of the department, but he shall not absent himself from the pumping station or its immediate vicinity without permission asked and obtained from the water office.

4. He shall keep closely posted up the book of record of the pumping engine, which will be furnished him.

5. He shall make a daily report to the Water Registrar of the height of water in the well and river; the quantity of water pumped, and of coal consumed, and of the general condition of the pumping station, and of the work under his charge. He shall also make weekly reports to the City Engineer of the engine record, upon blanks to be furnished him.

SECTION 8.**Fireman.**

1. The fireman shall, under the supervision of the pumping engineer, attend to the firing of the boilers, and perform all work incidental thereto; it shall be his personal duty to keep boilers, furnaces, boiler-room, coal-room, and other adjuncts to the boiler-room in a neat and proper condition.

2. He shall not absent himself from the pumping station without permission of the pumping engineer, but shall be entitled to one day's leave of absence in each week, when such absence will not interfere with the proper performance of his duties.

3. He shall keep a careful record of the amount of coal used, and the purpose of its use.

SECTION 9.**Employees.**

1. The foreman of main and service pipe and two of the teamsters shall at all times be under the direction of the Superintendent; the other teamster shall be also under the direction of the Superintendent at such times as his services are not required by the Inspector. The clerk in the Water Board office shall be under the direction of the Water Registrar.

SECTION 10.**General Rules.**

1. The matter of employment and discharge of other assistance than labor shall be exercised only by the Board.

2. The Board shall establish the compensation of all employees of the department, under the ordinance, and no

change in compensation of any employee shall be made without the consent of the Board.

3. No expenditure whatever shall be incurred by any employee of the department without authority therefor from the Board.

4. The Board desires that it shall be distinctly understood by all employees, that the department expects, in return for the pay attached to their several positions, the whole of their time, and the best of their ability. No extra pay for work directly connected with their duties will be allowed to persons whose pay is fixed by the month or year, and no absence from duty without leave will be permitted.

A BIOLOGICAL EXAMINATION OF THE WATER SUPPLY OF NEWTON, MASS.

[Published by courtesy of the authors.]

BY W. T. SEDGWICK, PH.D., AND S. R. BARTLETT, S.B.

READ BEFORE THE SOCIETY OF ARTS, JAN. 12, 1888.

THE city of Newton gets its water from a filter-basin 1,575 feet long, running alongside the Charles River in the town of Needham. The water in the filter-basin is pumped by engines in a pumping-station near by, to a reservoir some four miles distant on Waban Hill, from which it flows by gravity to all parts of the city. In the spring of 1887 the authors made, in the Biological Laboratory of the Institute of Technology, a quantitative bacteriological examination of the water from the Charles River, the filter-basin, the reservoir on Waban Hill, and the tap in the city of Newton, estimating carefully the number of bacteria and moulds in equal samples of water taken from the different localities on the same successive days. At the same time, Mrs. Richards and Mr. Bartlett carried on a chemical examination of similar samples in the Institute Laboratory of Sanitary Chemistry. In the course of the investigations 145 biological and 117 chemical analyses were made, and all the work was done between April 1 and May 15.

The method employed in the biological examinations was the well-known gelatine plate-culture method of Koch. The usual accessory apparatus was employed, and need not be described. The principle underlying the method is this:

By mixing a known volume of the water under examination with a much larger volume of so-called "sterilized nutrient gelatine," the germs in the water are first *separated* somewhat widely from each other in the melted gelatine; and afterward, when the gelatine has been poured out on a cool plate carefully levelled, are *kept* separate and isolated by the stiffened mass. They are thus held securely apart, but may still easily grow and multiply in the nutrient mass, enriched as it is by meat extract, peptone, etc. At first the gelatine appears perfectly clear and pure; but after a day or two, comparatively opaque whitish or yellowish dots or islands may be detected, due to the rapid, though localized, increase of the germs. Each of these dots, if caused by bacteria, is called a "colony," and is taken to represent one "germ" in the original water, provided the gelatine used was properly sterilized, i.e., freed from all living germs. Moulds have an equally characteristic, though different appearance, and thus both may be recognized after a time, and the total number of living "germs" in the original sample readily and accurately estimated.

The water brought in for examination was collected and transported with great care in small glass-stoppered bottles holding about 60 c.c. These were carefully cleaned, and enclosed in tin canisters made to fit them rather tightly, and all were thoroughly sterilized at 160° C. in the hot-air sterilizer. The tin covering prevented any accumulation of dust around the stopper, and allowed, without injury, considerable knocking about in transportation. In getting the sample of water desired, the bottle was taken from its case, rinsed in the water to be collected, held well under, and filled by lifting the stopper. It was then returned to its tin

case, and thus conveyed to the laboratory, where the culture was made, usually within three hours from the time of collection.

Some of the more important results are indicated in the following tables:—

NUMBER OF BACTERIA PER CUBIC CENTIMETER OF WATER.

1887.	Charles River.	Filter Basin.	Waban Hill Reservoir.	A Tap in Newton.
April 1 . . .	315	15	—	—
6 . . .	267	80	Apr. 11, 18	8
18 . . .	220	48	48	6
27 . . .	175	40	20	0
May 1 . . .	200	15	10	4
9 . . .	150	64	18	Apr. 29, 12
Averages . .	221	43	23	6

BACTERIOLOGICAL COMPARISON OF THE TAP WATER OF NEWTON AND BOSTON (BACK BAY) DURING ONE WEEK.

DATE.	COLONIES PER C.C., NEWTON.		COLONIES PER C.C., BOSTON.	
	A	B	A	B
May 6 . . .	0	4	48	60
7 . . .	6	12	30	44
8 . . .	Sunday.	Sunday.	Sunday.	Sunday.
9 . . .	8	14	40	52
10 . . .	0	4	24	60
11 . . .	2	4	28	32
12 . . .	0	8	25	35
13 . . .	12	15	55	65
Averages . .	6		43	

Average number of bacteria per c.c. found in the water from

Newton (tap)	6
Boston (tap on the Back Bay)	43
Mystic (tap in Charlestown)	204
Spot Pond (pond)	38
Spot Pond (tap in Medford)	10
Jamaica Plain (Boston High Service)	52

The first table shows a considerable and constant difference in the abundance of living bacteria in the several waters examined, and indicates a progressive purity, in this respect, as the water nears the point of consumption. The largest difference between successive samples is that between the river water and that in the filter-basin, and this is easily explained by a consideration of the conditions prevailing in each. The river is an ordinary stream, draining a rather thickly inhabited country, and hence is more or less polluted. The filter-basin, on the contrary, although dug parallel to the river and near it, probably gets from it little or no water. This comes instead from the other direction, owing to the slope of the adjacent country; and especially from eight artesian wells driven in its bottom to a depth of thirty feet, where they penetrate a quicksand and a gravel overlying bed-rock inclined toward the river. Thus it comes about that the water in the filter-basin is sometimes higher than that in the river, and always far more constant in temperature; and thus, too, it happens that the water of the river contained 221 germs per cubic centimeter in April and May, 1887, while that in the filter-basin showed only 43. The filter-basin, even to the naked eye, was much cleaner and purer than the river, although it contained a very considerable amount of filamentous algæ, — principally *Zygnema*. It is

less easy to explain the progressive decrease of bacteria from the filter-basin to the tap, but it is perhaps not unreasonable to suppose that the stock of organic matter, i.e., of food for the germs, in this (principally) artesian water was originally small, and gradually fell short.

The Newton water supply is generally regarded as very superior; and, as will be seen by inspection of the above tables, the biological examination, as far as it goes, abundantly confirms this view.

CHEMICAL EXAMINATION.¹

While the biological analyses just described were going on, a considerable number of chemical analyses of the Newton water was carried out in the Institute Laboratory of Sanitary Chemistry.

These chemical analyses of the water were likewise all made between the first of April and the middle of May, 1887,—a season which presumably would give as widely varying results as any season of the year.

From the accompanying table it will be seen that the amount of free ammonia was found to be more variable than that of the albuminoid ammonia. It seems to be also definitely established that the analysis of one sample of water, taken on a certain day at a certain season of the year, ordinarily gives no correct indication of the condition of the water the year round, since certain local causes may, for a few days, exercise a marked influence.

It will further be seen that the water was chemically (as well as bacteriologically) better when drawn from the tap than when taken from the reservoir or the filter-basin. This may perhaps be accounted for by assuming that some of the

¹ Communicated by Ellen H. Richards and S. R. Bartlett.

organic matter settles out, and some is decomposed by the bacteria in the reservoir and the pipes.

CHEMICAL ANALYSES OF THE NEWTON WATER SUPPLY. — PARTS
PER 100,000.

	CHARLES RIVER.		FILTER-BASIN.		RESERVOIR.		TAP.	
	Free Ammonia.	Albuminoid Ammonia.	Free Ammonia.	Albuminoid Ammonia.	Free Ammonia.	Albuminoid Ammonia.	Free Ammonia.	Albuminoid Ammonia.
April 1 . .	.0070	.0250	.0150*	.0078				
6 . .	.0030	.0212	.0014	.0038				
11 . .					.0018	.0100		
18 . .	.0046	.0254	.0038	.0118	.0320†	.0158	.0018	.0056
27 . .	.0012	.0264	.0018	.0138	.0038	.0096	.0004	.0080
May 1 . .	.0014	.0264	.0026	.0126	.0030	.0130	.0004	.0050
9 . .	.0050	.0194	.0004	.0120	.0016	.0094	.0012	.0063

A determination of the most important mineral constituents was made, and is given in comparison with a determination of the same substances in the Boston water supply as follows:—

	Newton Tap, May, 1887. S. R. Bartlett.	Boston Tap, July, 1873. E. H. Richards.
Total solid residue.	4.28	5.64
Loss on ignition . . . . .	.17'	2.80
Fixed solids	4.11	2.84
Silica, SiO_2 . . . . .	.77	.28
Lime, CaO} . . . . .	.57	.42
Sulphuric Acid, SO_3 . . . . .	.57	.91
Iron and Aluminum Oxides, $\text{Fe}_2\text{O}_3 + \text{Al}_2\text{O}_3$.	.34	.85
Chlorine, Cl} . . . . .	.20	.34
Magnesium Oxide, MgO} . . . . .	.09	.06
Sodium Oxide, Na_2O	} .44	{ .17
Potassium Oxide, K_2O		
		.25

On April 1 the ice had just begun to break up.

* Possibly due to melted ice, or to the fact that the water under the ice is more nearly stagnant.

† Taken just after a snow-storm. The banks of the reservoir had also been recently dressed with fertilizer.

SUMMARY OF STATISTICS.

REPORT OF 1887.

In Accordance with the Recommendation of the New England
Water Works Association. Newton Water Works, Middlesex
County, Mass.

Population by census of 1885	19,759
Date of construction	1876
By whom owned	City of Newton
Source of supply	Filter basin on the bank of Charles River, fed by inter- cepted springs.
Mode of supply	Pumping through the mains to the reservoir, making the reservoir a storage and reg- ulating basin.

PUMPING.

1. Builder of pumping machinery H. R. Worthington
2. Description of coal used : —

(b) Kind	Bituminous
(c) Size	Broken
(d) Brand	Georges Creek, Cumberland
(e) Price per gross ton delivered	\$5 20
(f) Percentage of ash (estimated)	10
(g) Wood, price per cord	\$6 00

3. Coal consumed for the year, in pounds . . . 869,600
 4. $\frac{\text{Wood consumed for the year, in lbs.}}{3} = \text{coal in lbs.}$. . . 21,500
 5. Total fuel consumed for the year (3) + (4) . . . 891,100
 6. Total pumpage for the year, in gallons . . . 253,143,000
 7. Average static head against which pumps
work 176.71
 8. Average dynamic head against which pumps .
work 226.72
 9. Number of gallons pumped per pound of
coal 291.00
 10. Duty in foot-pounds, per 100 pounds of coal,
using following formula, reckoning only
coal actually used in pumping: —
- $$\text{Duty} = \frac{\text{Gallons pumped (6)} \times 8.34 \text{ (lbs.)} \times 100 \times \text{dynamic head (8)}}{\text{Total fuel consumed (5)}} = 53,719,973$$

**Cost of Pumping figured on Pumping Station Expenses of
\$5,104.11.**

11. Per million gallons raised against average
dynamic head (8) into reservoir . . . \$20 16
12. Per million gallons raised one foot high
(dynamic) '08 $\frac{8}{10}$

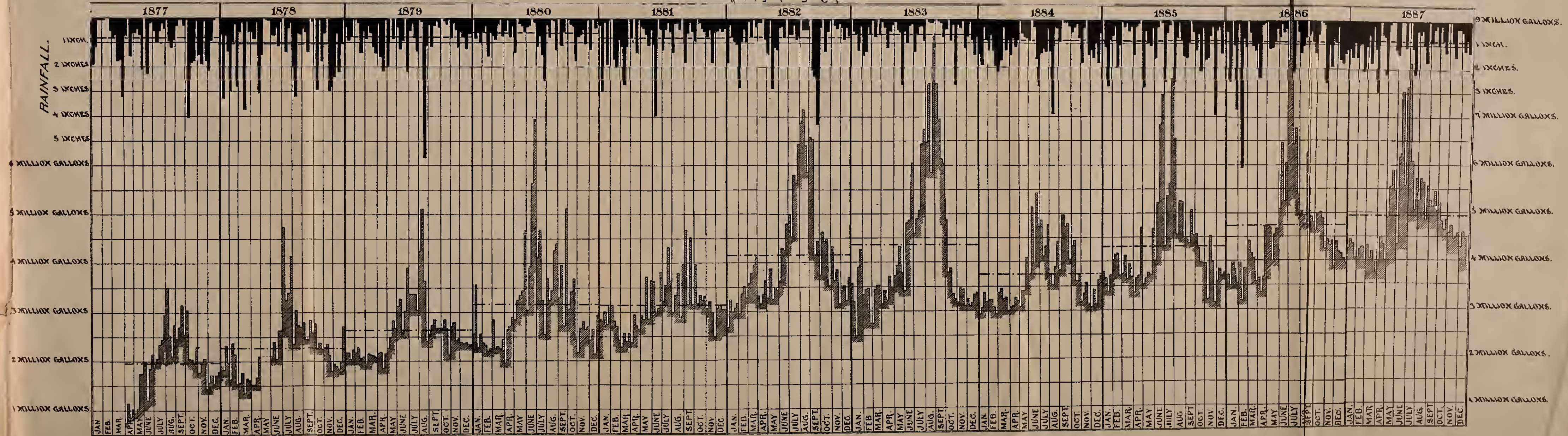
**Cost of Pumping figured on Total Maintenance (see Financial c. c.)
\$69,691.64.**

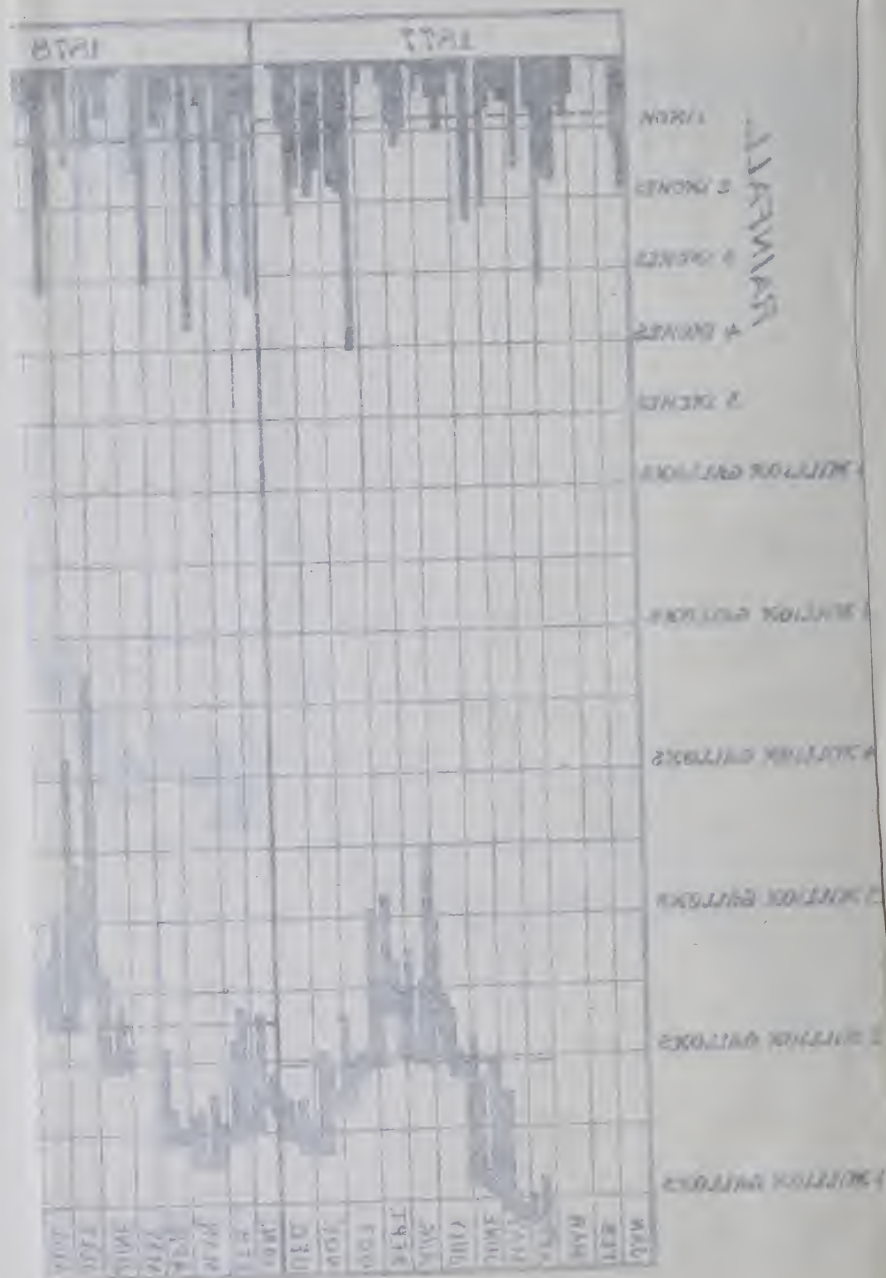
13. Per million gallons raised against average
dynamic head (8) into reservoir . . . \$275 31
14. Per million gallons raised one foot high
(dynamic) 1 21

NEWTON WATER WORKS.

DIAGRAM SHOWING WEEKLY CONSUMPTION AND RAINFALL FROM 1877 TO 1887 INCLUSIVE.

- Compiled by the City Engineer -





FINANCIAL STATEMENT.

MAINTENANCE ACCOUNT.

RECEIPTS.

EXPENDITURES.

DIVISION I.

From Consumers:

A.	Water rates, domestic	\$41,211 50	
B.	Water rates, manufacturing,	1,736 26	
C.	Services and meters put in and repaired	5,194 64	
D.	Total from private customers	\$48,142 40	

From Public Funds:

E.	Hydrant service, 471 at \$20, \$9,420 00	
F.	Horse troughs 10, all metered, 504 10	
G.	Street watering, meter rates, 3,689 33	
H.	Public buildings, all metered, 558 80	
I.	Drinking posts 8, at \$6, 48 00	
J.	Public fountain, one, metered, 81 06	
K.	Total from public funds,	14,301 29
L.	Gross receipts from all sources,	\$62,443 69

DIVISION II.

M.	From fixed rates, domestic	\$17,788 54	
N.	From meter rates, domestic,	37,724 25	
O.	From meter rates, manuf'g,	1,736 26	
P.	Balance, <i>deficit</i>	\$57,249 05	
		11,609 79	
		\$74,053 48	
			EE.
	Total	\$74,053 48	

AA.	Management and repairs, details on p. 23,	\$13,951 64
BB.	Interest on bonds	55,740 00
CC.	Service and meter account, details on p. 24,	3,998 79
DD.	Rebate account	363 05

FINANCIAL STATEMENT — *Concluded.*

CONSTRUCTION ACCOUNT.

RECEIPTS.		EXPENDITURES.	
From bonds issued	\$71,509 37	Expended for all purposes on this account (for details see p. 25)	\$77,534 35
From city treasury, borrowed in anticipation of sale of bonds	4,544 77		
From pipe sold, labor, etc.	1,479 21		
Total	<u>\$77,534 35</u>		<u>\$77,534 35</u>

Net cost of works to date	\$1,119,544 77	{ \$600,000, 6 per cent.
Bonded debt at date	1,115,000 00	{ 250,000, 5 per cent.
Value of sinking fund at date	222,811 66	{ 265,000, 4 per cent.
Average rate of interest	5 ³ / ₁₀ per cent.	

CONSUMPTION.

1. Estimated total population	22,500
2. Estimated population on lines of pipe	21,500
3. Estimated population supplied at date	21,000
4. Total number of gallons consumed for year, 256,851,330	
5. Passed through domestic meters, gallons	
6. Passed through manufacturing meters, gallons	
7. Average daily consumption in gallons	703,702
8. Gallons per day, each inhabitant (1)	$31\frac{3}{10}$
9. Gallons per day, each consumer	$33\frac{5}{10}$
10. Gallons per day to each tap (distribution 22)	187

DISTRIBUTION.

1. Kind of pipe used	Cast iron
2. Size	From 20 inches to 4 inches
3. Extended	32,052 feet
4. Discontinued	None
5. Total now in use	83 miles
6. Cost of maintenance per mile, including re- repairs, blowing off, care of hydrants, etc.	\$14 50
7. Number of leaks discovered for year	5
8. Small distribution pipes, less than 4 inches, total length	2.2 miles
9. Hydrants added	69
10. Number now in use	540
11. Stop-gates added	33
12. Number now in use	404
13. Small stop-gates less than 4 inch	30
14. Number of blow-off gates	142
15. Range of pressure at centre for day and night (average) pounds	60

SERVICES.

16. Kind of pipe used . . .	Lead, wrought and cast iron	
17. Size	From $\frac{1}{2}$ to 4 inches	
18. Extended	16,457 feet	
19. Discontinued	20	
20. Total now in use	46.2 miles	
21. Service taps added	335	
22. Number now in use	3,767	
23. Average length of service	44.7 feet	
24. Average cost of service	} Gross, \$17 92 } Net, \$12 97	
25. Meters added		781
26. Number now in use :—		
(a) Domestic	2,365	
(b) Manufacturing	5	
	—	2,370
27. Motors and elevators added	1	
28. Number now in use	12	

GENERAL INDEX.

GENERAL INDEX.

ABBREVIATIONS.

M. A., Mayor's Inaugural Address; A. R., Auditor's Annual Report; C. E., City Engineer's Report; C. M., City Marshal's Report; F. D., Report of Chief of Fire Department; F. L., Report of Trustees of Free Library; O. P., Report of Overseers of the Poor; B. H., Report of Board of Health; S. C., Report of School Committee; W. B., Report of Water Board.

Alarms, Fire, List of	F. D. 27
Almshouse	A. R. 53, 64, O. P. 9
Analysis, Monthly, of Water-Supply	C. E. 43, W. B. 28
Apparatus, Fire	F. D. 5
Appropriations, etc.	A. R. 43
Armory	A. R. 53, 67, M. A. 45
Arrests	M. A. 36, C. M. 3
Art Department of Library, Additions to	F. L. 17
Ashes, Removal of	M. A. 18, C. E. 36
Assessors' Department	M. A. 41
Assessors, Legislation upon Duties of	M. A. 41
Assets	A. R. 33
Athenæum at West Newton	M. A. 27
Auditor's Annual Report	A. R. 22
Bacteria in Newton Water-Supply	W. B. 47
Bartlett, S. R., S.B., and Sedgwick, W. T., Ph.D. : A Biological Examination of the Water-Supply of Newton, Mass.,	W. B. 45
Births, Marriages, Deaths, etc.	A. R. 199
Bixby, Henry L., Chief of Fire Department, Report of	F. D. 3

Board of Health	C. E. 52
Report of for 1887	B. H. 15
Rules and Regulations of	C. E. 69
Books, Gifts of to the Library	F. J. 18
Boston and Newton, Comparison of Tap Water	W. B. 47, 50
Bunker, Madison, Fire Department Veterinarian, Report of	F. D. 13
Calisthenics	M. A. 24
Catch-basins	C. E. 24
Cate, Edward W., President, Report of Water Board	W. B. 7
Cemetery, Improvement of	M. A. 5
Charles River, New Foot-Bridge across	M. A. 29
Charter, Recommendation to amend	M. A. 6
City Clerk's Statistics	A. R. 199, B. H. 21
City Engineer's Department, Ordinances relating to	C. E. 66
City Farm	M. A. 41, O. P. 7
City Government, 1887	A. R. 7
City Hall	A. R. 54, 73
Claffin Guard	M. A. 44
Climatic Conditions	B. H. 17
Concreting	C. E. 37
Corporation Tax	A. R. 54, 164
Cottage Hospital, The Newton	M. A. 5, O. P. 7, B. H. 17
Cows	B. H. 16
Culverts	C. E. 23, A. R. 90
Curbing	C. E. 21, A. R. 89
Deaths, etc., in 1887	A. R. 202, B. H. 21
Causes of	B. H. 21
Debt, Permanent	M. A. 11, A. R. 46
Diseases, Dangerous, Cases reported	B. H. 19
Statement showing Causes of Death in Each Month	B. H. 21
Dogs	A. R. 54, 204
Drains and Culverts	C. E. 23, A. R. 90
Dwelling-Houses, Water-Rates for	W. B. 36
Electric Light and Power Company, The Newton	M. A. 37, F. D. 16
Eliot Church, burning of	F. D. 3
Emergency Lectures to Patrolmen	M. A. 36

Emerson, Thomas, School Superintendent, Report of	S. C. 19-48
Population	19
School Buildings	20
Schools	21
Teachers	21
Enrolment and Attendance	22
School Census	23
Schoolhouses	24
Attendance	28
Cost of the Schools	29
Truancy	34
Text-Books	35
Evening School	36
General Condition	37
Appendix — Statistics in Detail	39
Engineer's Annual Report	C. E. 5
Estate, Real and Personal, etc., Table showing	A. R. 185
Evening School	M. A. 24, S. C. 36
Expenses in 1887	A. R. 40
Expenses, Detailed Statement of	A. R. 64-177
Almshouse	64
Armory Expenses	67
Addition to Newton Free Library Building	67
Books, Stationery, and Printing	68
Board of Health	69
Burial Grounds	71
City Engineer's Department	71
City Hall	73
Fire Department	74
Funded Debt, Town Note	89
Funded Debt, Schoolhouse Note	89
Funded Debt, School Note for Land	89
Funded Debt, High School Building	89
Funded Debt, Newton Free Library Building	89
Highways, Curbing	89
Highways, Drains and Culverts	90

Expenses, Detailed Statement of, *Continued.*

Highways, General Repairs	A. R 92
Highways, Gravel Land	101
Highways, Land Damages	102
Highways, Removal of Ashes	102
Highways, Sidewalks and Street Crossings	103
Highways, Widening, Reconstruction, and Improvements,	104
Interest on City Loans, Permanent	105
Interest on City Loans, Temporary	106
Interest on Water Bonds	107
Indigent Soldiers and Sailors	108
Memorial Day	108
Miscellaneous Expenses	108
Newton Free Library	120
Newton High School Building (enlargement)	124
Newton Cottage Hospital	125
Parks and Squares	125
Police Department	126
Poor out of Almshouse	130
Public Property	136
Read Fund Income	141
Salaries	142
Schools, Conveyance of Pupils	143
Schools, Evening	143
Schools, General Appropriation	146
School Incidentals	155
Sinking Fund, City Debt	160
Sinking Fund, School Loan	160
Sinking Fund, Water Bonds	160
Sinking Fund, Public Park Loan	161
State Aid	161
Street Light Department	162
Suspense Account	163
Taxes 1887, County	164
Taxes 1887, Corporation	164
Taxes 1887, National Bank	164

Expenses, Detailed Statement of, *Continued.*

Taxes 1887, State	A. R. 164
Temporary Loans, 1887	164
Thompsonville Schoolhouse, Land for	165
Water Construction	166
Water Maintenance	170
Water Meters and Service Pipe	175
Water Rebate	176
Watering Streets, and Water for Same	177
Water, Use of Hydrants	177
Farlow, John S., President, Report of Free Library	F. L. 9
Farm, City	M. A. 41, O. P. 7
Females arrested	C. M. 6
Finance	M. A. 8
Report of Committee on	A. R. 29
Fire-Alarm Telegraph and Telephones	M. A. 33, F. D. 10, 15, 23
Fire Department	M. A. 33
Annual Report of Chief of	F. D. 3
Roster of Companies	F. D. 19
List of Fires and Alarms in 1887	F. D. 27
Rules and Regulations of	F. D. 38
Uniform of	F. D. 54
Ordinances relating to	F. D. 62
Statistics for 1887	F. D. 79
Receipts from	A. R. 54
Expenses of	A. R. 74
Fire Statistics, 1887	F. D. 79
Fires and Alarms in 1887	F. D. 27
Foot-Bridge across Charles River	M. A. 29
Free Library	M. A. 25
Annual Report of Trustees of	F. L. 7
Superintendent's Report	F. L. 11
Statistics of, for 1887	F. L. 20
Periodicals in Reading-Room	F. L. 25
Addition to Building	F. L. 11, A. R. 67
Expenses of, for 1887	F. L. 120

Funded Debt	A. R. 55, 89
Graduates, High School	S. C. 49
Hammond, Daniel M., City Marshal, Report of	C. M. 1
Health, General	M. A. 17
High School	S. C. 12
Building for	M. A. 16, 23
Graduates of	S. C. 49
Highway Department	M. A. 27, C. E. 13, A. R. 55
Highways	C. E. 15, A. R. 89
General Repairs of	C. E. 29
Widening, Reconstruction, and Improvement of	C. E. 34
Hose, Fire	F. D. 7
Hyde's Brook Drain (with plan)	C. E. 18
Hydrant Service	F. D. 7
Incendiarism	F. D. 8
Inspection of Plumbing	C. E. 52
Intoxicating Liquors and Pauperism	O. P. 6
Kenrick Fund	A. R. 47, 56
Kenrick, John A., Treasurer, Report of	A. R. 23
Kimball, Hon. J. Wesley, Inaugural Address of	M. A. 3
Land Damages	C. E. 35
Laundry Brook District (with maps), Grading of	C. E. 54
Ledger Balances	A. R. 48
Liabilities	A. R. 31
Library Building, Addition to	M. A. 16, 26, F. L. 11, A. R. 67
Library, Organization of	F. L. 5
Trustees of	F. L. 3
Lodgers at Police-Stations	C. M. 7
Nativity of	C. M. 7
Malaria	B. H. 17
Marriages, etc , in 1887	A. R. 199
Marshal's Annual Report	C. M. 3
Mayor's Inaugural Address to the City Council	M. A. 3
Medical Examiner, Cases reported to	C. M. 9
Military Drill in High School	M. A. 24
Militia	A. R. 205

Mortality-Rates, Comparison of	B. H. 19
Mosman, Nathan, Agent Board of Health, Report of	B. H. 15
Nativity of Prisoners	C. M. 7
Of Lodgers at Police-Stations	C. M. 7
Noyes, Albert F., City Engineer, Report of	C. E. 5
Nuisances	B. H. 17
Numbering Streets	C. E. 10
Offences for which Arrests were made	C. M. 5
Officers, City, Salaries of	A. R. 186
Ordinances relating to City Engineer's Department	C. E. 66-68
City Engineer	66
Highway Department — Streets and Ways	67
Buildings	67
Ordinances relating to Fire Department	F. D. 62-78
Fire Department	62
Buildings	69
Gunpowder and Other Explosive Compounds	70
Telegraph, Telephone, and Electric-Light Lines	73
Ordinances relating to Water Department	W. B. 31
Otis, Benjamin F., Auditor, Report of	A. R. 22
Overseers of the Poor	M. A. 40
Board of	O. P. 3
Annual Report of	O. P. 5
Patrolmen, Reports of to City Marshal	C. M. 8
Emergency Lectures to	M. A. 36
List of	C. M. 10
Peirce, Bradford K., Superintendent, Report of Free Library	F. L. 11
Permanent Debt	M. A. 11, A. R. 46
Playgrounds, Public, recommended	M. A. 18
Plumbing, Inspection of	C. E. 52
Police Department	M. A. 35
Organization	C. M. 10
Table showing Growth of	C. M. 13
Police Work, Local	C. M. 4
Polls, Table showing Number of	A. R. 185
Poor Department	M. A. 40, O. P. 5

Poor out of Almshouse, Amount paid for	A. R. 130, 186
Prisoners, Nativity of	C. M. 7
Probation Work	C. M. 11
Property, City, Real and Personal, Schedule of	A. R. 178
Property, Public	M. A. 38, C. E. 50, A. R. 59, 136
Read Fund	M. A. 17, A. R. 60, 141
Reading-Room, List of Periodicals in	F. L. 25
Receipts in 1887	A. R. 38
Receipts, Detailed Statement of	A. R. 53-64
Almshouse	53
Armory	53
Betterments	54
City Hall	54
Collector's Fees	54
Corporation Tax	54
Dog Tax	54
Druggists' License Fees	54
Fire Department	54
Funded Debt— Water Bonds	55
Highway Department	55
Interest on Farlow Park Betterments	55
Interest on Deposits	55
Interest on Taxes	55
Interest on City Loans	56
Interest on Water Bonds	56
Indigent Soldiers and Sailors	56
Kenrick Fund Income	56
Miscellaneous	57
National Bank Tax	57
Newton Free Library	57
Police Department	57
Poor out of Almshouse	58
Peddlers' Licenses	59
Public Property	59
Premium on Tax Sale	59
Premium on Water Bonds	59

Receipts, Detailed Statement of, *Continued.*

Record and Other Fees	A R. 59
Read Fund Income	60
School Incidentals	60
Ships engaged in Foreign Trade	60
Sinking Fund Commissioners	60
Sidewalks and Curbing	60
State Aid	60
Taxes, 1883 to 1888	60
Tuition for Non-Resident Pupils	62
Temporary Loans	62
Water Meters and Service-Pipes	63
Water-Rates	64
Water-Rates by Meters	64
Water Department	64
Water Construction	170
Water Rebate	64
Registration	M. A. 44, A. R. 205
Roster of Companies, Fire Department	F. D. 19
Rules and Regulations of Board of Health of Water Department	C. E. 69 C. E. 75, W. B. 38
Rules and Regulations of Fire Department	F. D. 38-53
Chief of Department	38
Assistant Chief	38
Engineers	39
Drivers	40
Exercise Hours	41
Right of Way	42
Stokers	42
Foremen	43
Fines	43
Assistant Foremen	43
Members	43
Substitutes	44
Bunkers	44
Horses and Feeding	45

Rules and Regulations of Fire Department, *Continued.*

Badges	F. D. 46
Roll-Call	46
Leave of Absence	46
Supplies	47
Meals	47
Duties at Fires	47
Going to or from Fires	48
Riding to Fires	48
Fire-Grounds	48
Stations	48
Drill	49
Conduct	49
General Rules	51
Salaries of City Officers	A. R. 142, 186
School Committee, Annual Report of	S. C. 9
Organization	S. C. 3
Standing Committees	S. C. 6
Secretary's Report	S. C. 17
Superintendent's Report	S. C. 19
Statistics	S. C. 39
High School Graduates	S. C. 49
Schools and Teachers	S. C. 50
Schoolhouses	M. A. 38, C. E. 50, S. C. 24
Schools and Teachers, List of	S. C. 50-57
High School	50
Bigelow School	50
Underwood School	51
Lincoln School	51
Eliot School	51
Jackson School	52
Adams School	52
Claffin School	52
Pierce School	53
Davis School	53
Franklin School	53

Schools and Teachers, List of, *Continued.*

Barnard School	S. C.	54
Williams School		54
Hamilton School		54
Prospect School		55
Hyde School		55
Mason School		55
Rice School		56
Thompsonville School		56
Oak Hill School		56
Special Teachers		56
Schools	M. A.	22
Total Enrolment in	M. A.	23
Cost of	S. C.	29
Statistics of	S. C.	39
Sedgwick, W. T., Ph.D., and Bartlett, S. R., S.B.: A Bio-		
logical Examination of the Water-Supply of Newton,		
Mass.,	W. B.	45
Sewage, Utilization of	C. E.	45-49
at Chelsea, Mass.		45
at East Orange, N.J.		46
at Long Branch, N.J.		46
at Atlantic City, N.J.		47
at Pullman, Ill.		47
at Bryn Mawr, Penn.		49
at Wayne, Penn.		49
Sewerage	M. A. 19, C. E.	45
Report of Joint Special Committee on	C. E.	60
Sidewalks and Street-Crossings	C. E.	37
Signal Stations, Location of	F. D.	24
Sinking Funds	M. A.	12
Report of Commissioners of	A. R.	50
Station Houses	C. M.	13
Statistics of Births, Marriages, Deaths, etc.	A. R.	199
Street Lights	M. A. 36, C. M.	11
Streets accepted in 1887	C. E.	8

